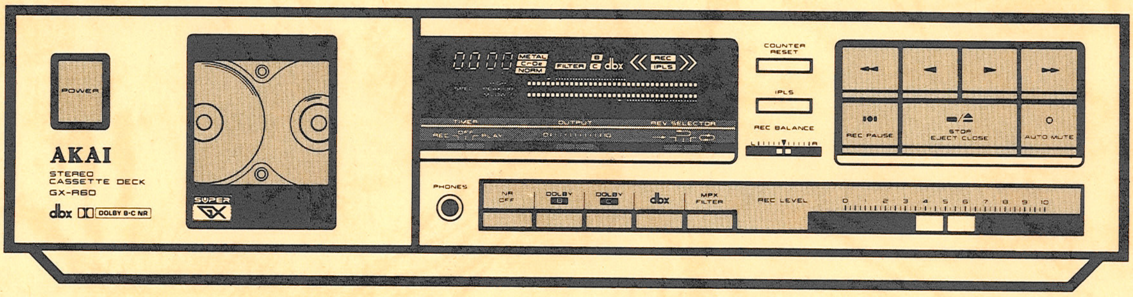
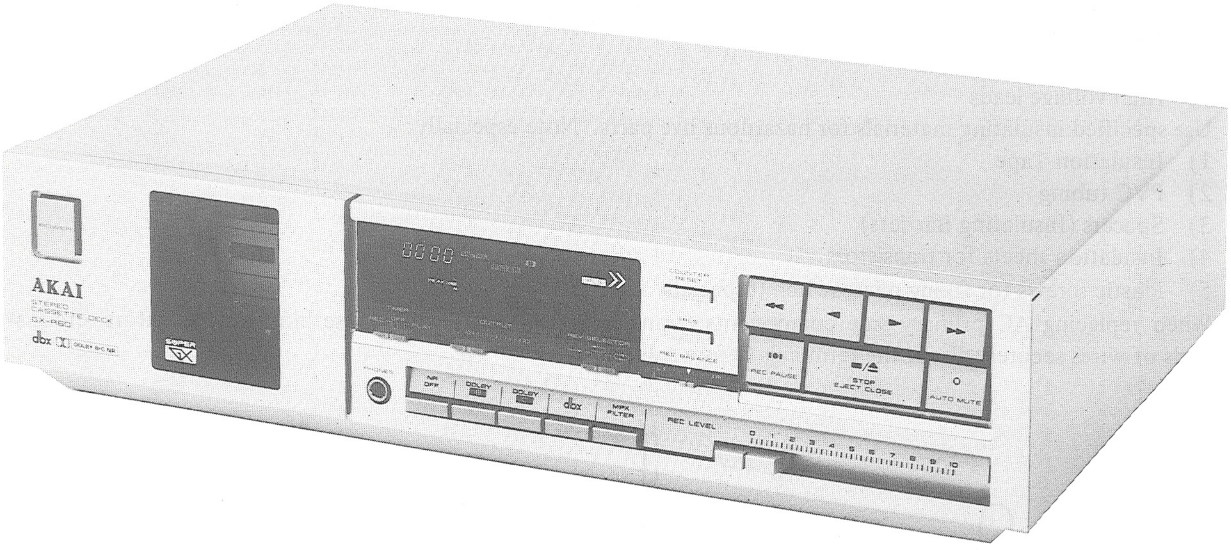
GX-R60

AKAI SERVICE MANUAL


POWER
AKAI
STEREO
CASSETTE DECK
GX-R60
dbx
DOLBY B-C NR
SUPER GX
0000
METAL
CrO2
NORM
FILTER
B
C
dbx
REC
IPLS
TIMER
OFF
REC
PLAY
OUTPUT
REV SELECTOR
COUNTER
RESET
IPLS
REC BALANCE
L
R
REC PAUSE
STOP
EJECT CLOSE
AUTO MUTE
PHONES
NR
OFF
DOLBY
B
DOLBY
C
dbx
MPX
FILTER
REC LEVEL
0
1
2
3
4
5
6
7
8
9
10

STEREO CASSETTE DECK

MODEL GX-R60


AKAI
STEREO CASSETTE DECK
GX-R60
dbx
DOLBY B-C NR
SUPER GX
COUNTER RESET
REC BALANCE
REC PAUSE
STOP
EJECT CLOSE
AUTO MUTE
PHONES
NR OFF
DOLBY
DOLBY
dbx
MPX FILTER
REC LEVEL
TIMER
OUTPUT

STEREO CASSETTE DECK

MODEL GX-R60

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SECTION 2 PARTS LIST 19

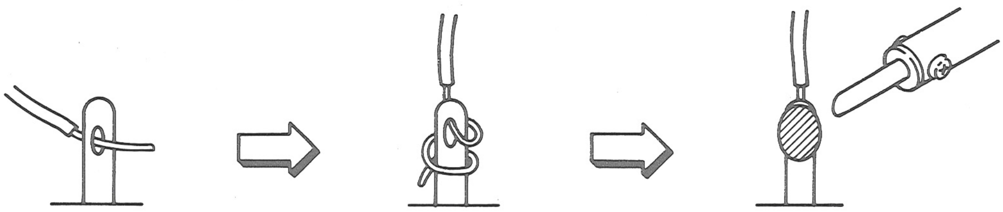
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\boxed{C}$ or $\boxed{A}$, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks. line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

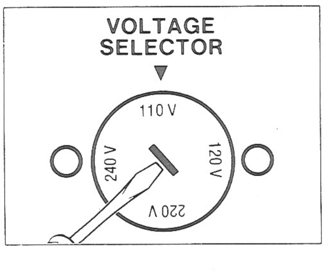
1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

VOLTAGE CONVERSION

Models for Canada, USA, Europe, UK and Australia are not equipped with this facility. Each machine is preset at the factory according to its destination, but some machines can be set to 110V, 120V, 220V, or 240V as required.
If your machine's voltage can be converted:
Before connecting the power cord, turn the VOLTAGE SELECTOR located on the rear panel with a screwdriver until the correct voltage is indicated.



CYCLE CONVERSION

With DC Motors, Cycle Conversion is not necessary.

SECTION 1

SERVICE MANUAL

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III. CONTROLS 6
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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

TRACK SYSTEM	4 track 2 channel stereo
TAPE	Phillips type cassette
HEADS	Twin field super GX head for recording and playback x 1 Erase head x 1
MOTORS	Electronically speed controlled DC motor for capstan drive x 1 DC motor for reel and lid drive x 1 DC motor for cam drive x 1
WOW & FLUTTER	0.05% WRMS (JIS), 0.12% (DIN) ±0.07% W. Peak (EIAJ) for J-model
FREQUENCY RESPONSE	
NORMAL	20 Hz to 17,000 Hz ± 3 dB
CrO_2	20 Hz to 18,000 Hz ± 3 dB
METAL	20 Hz to 19,000 Hz ± 3 dB
S/N (METAL)	60 dB 59 dB (EIAJ) For J-Model Dolby B type NR switch ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz Dolby C type NR switch ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz
DYNAMIC RANGE (dbx ON, 1 kHz)	110 dB
HARMONIC DISTORTION (METAL)	Less than 0.8% 0.8% (EIAJ) For J-model
INPUT SENSITIVITY/IMPEDANCE	
LINE	70 mV/47 kohms
OUTPUT SENSITIVITY/IMPEDANCE	
LINE	388 mV/1 kohms
HEADPHONES	1.3 mW (8 ohms)/83 ohms
POWER REQUIREMENTS	100V, 50/60 Hz for JPN 120V, 60 Hz for USA & Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK & Australia 110V/120V/220V/240V, 50 Hz/60 Hz convertible for other countries
POWER CONSUMPTION	17W for J-model
DIMENSIONS	440 (W) x 105 (H) x 280 (D) mm (17.3 x 4.1 x 11.0 inches)
WEIGHT	5.0 kg (11.0 lbs)

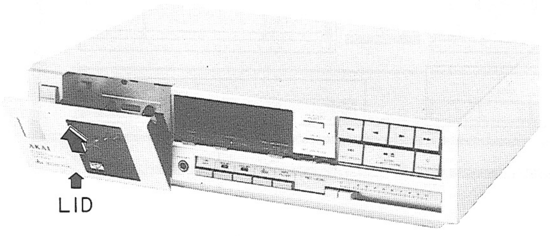
* For improvement purposes, specifications and design are subject to change without notice.

* Noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

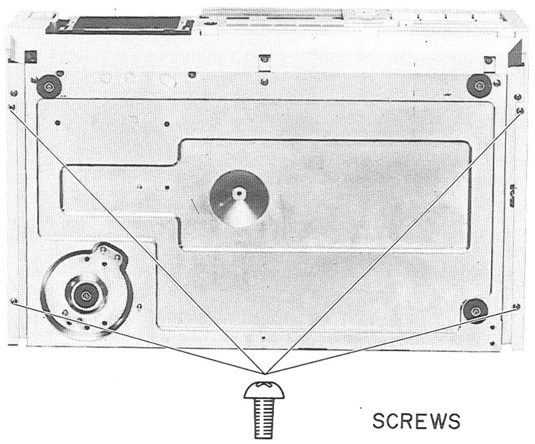
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

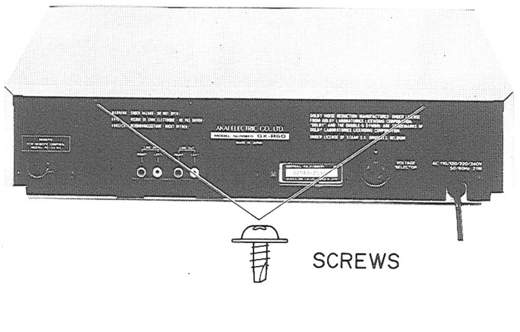
1



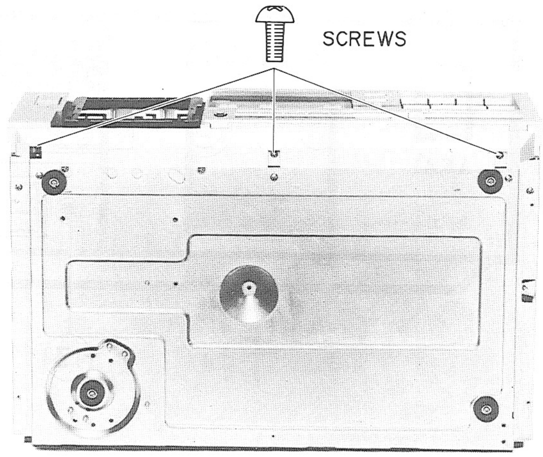
2



3



4



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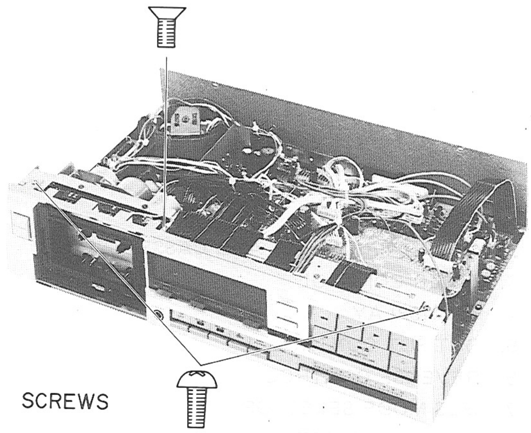
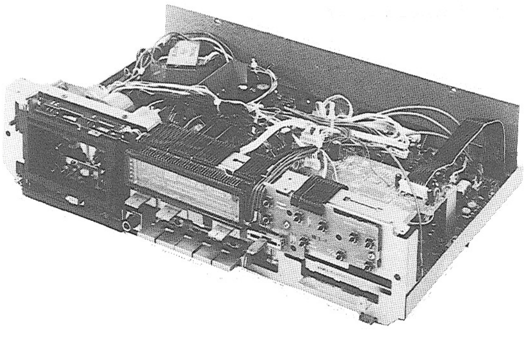
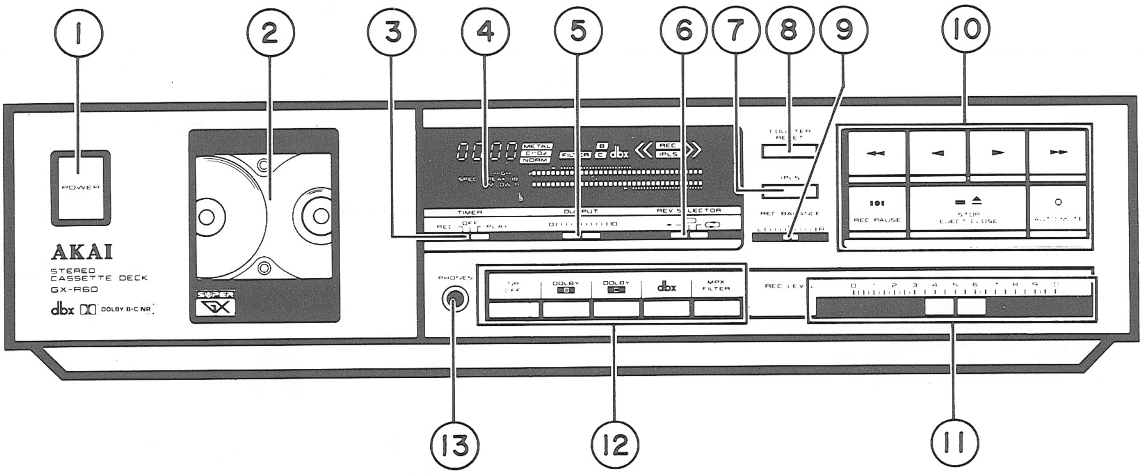


6



III. CONTROLS


1
2
3
4
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6
7
8
9
10
POWER
AKAI
STEREO CASSETTE DECK
GX-R60
dbx
DOLBY B-C NR
SUPER GX
METAL
CrO2
NORM
FILTER
dbx
REC
IPLS
TIMER
OFF
REC
PLAY
OUTPUT
REV SELECTOR
COUNTER RESET
IPLS
REC BALANCE
REC PAUSE
STOP
EJECT CLOSE
AUTO MUTE
PHONES
DOLBY B
DOLBY C
dbx
MPX FILTER
REC LEVEL
0
1
2
3
4
5
6
7
8
9
10
13
12
11

Fig. 3-1

1. POWER BUTTON
2. CASSETTE HOLDER AND CASSETTE LID
3. TIMER CONTROL
4. FL DISPLAY
5. OUT PUT CONTROL
6. REVERSE CONTROL
7. IPLS MODE SELECTOR
8. COUNTER RESET
9. REC BALANCE
10. TAPE TRANSPORT BUTTONS
11. REC LEVEL CONTROL
12. NOISE REDUCTION CONTROL
13. PHONES JACK

IV. PRINCIPAL PARTS LOCATION

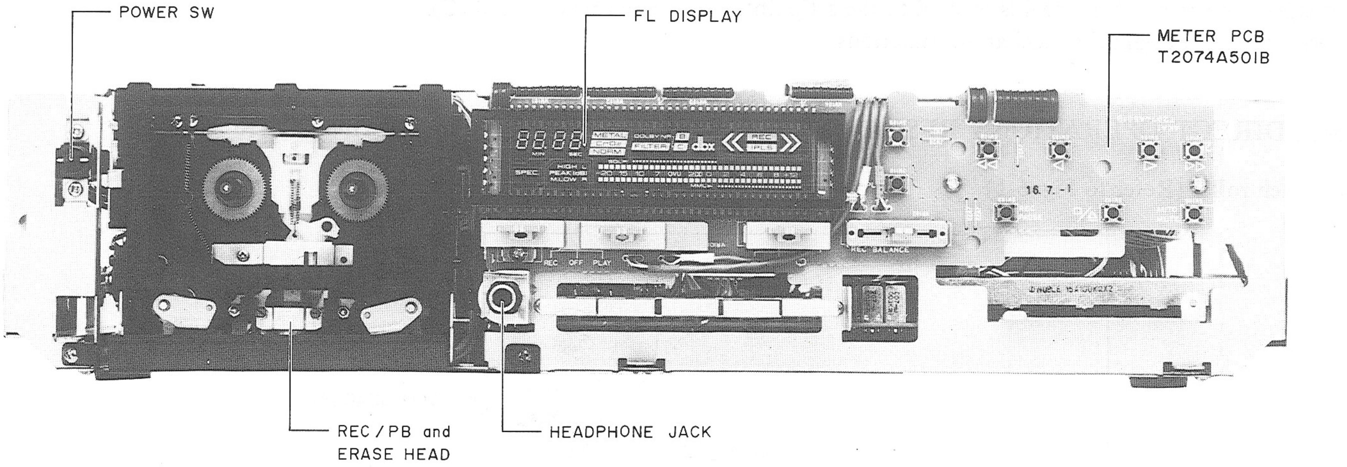
POWER SW
FL DISPLAY
METER PCB
T2074A501B
REC / PB and
ERASE HEAD
HEADPHONE JACK

Fig. 4-1 Front View

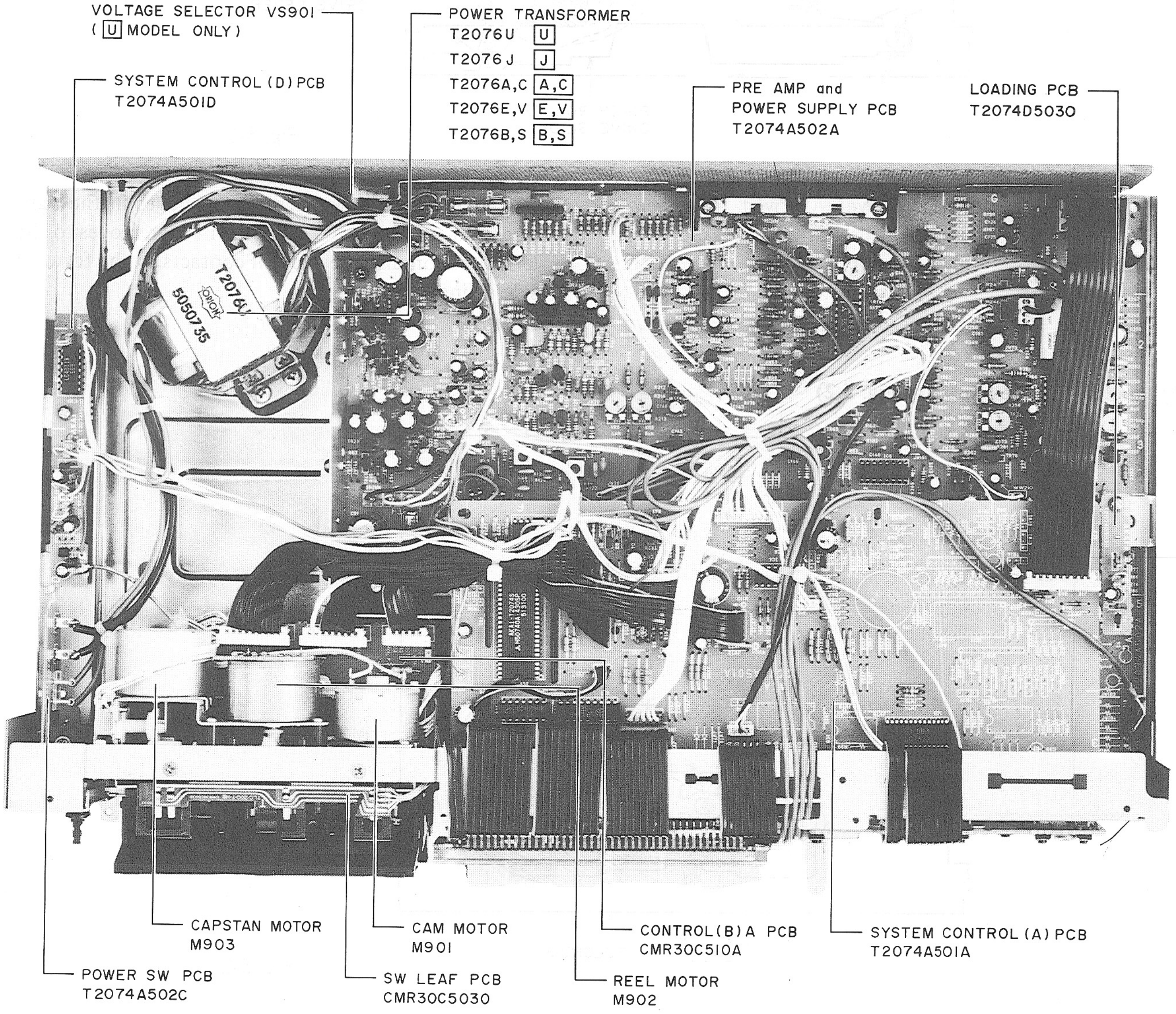
VOLTAGE SELECTOR VS901
(U MODEL ONLY)
SYSTEM CONTROL (D) PCB
T2074A501D
POWER TRANSFORMER
T2076U U
T2076 J J
T2076A,C A,C
T2076E,V E,V
T2076B,S B,S
PRE AMP and
POWER SUPPLY PCB
T2074A502A
LOADING PCB
T2074D5030
CAPSTAN MOTOR
M903
POWER SW PCB
T2074A502C
CAM MOTOR
M901
SW LEAF PCB
CMR30C5030
CONTROL(B)A PCB
CMR30C510A
REEL MOTOR
M902
SYSTEM CONTROL (A) PCB
T2074A501A

Fig. 4-2 Top View

V. MECHANISM EXPLANATION OF EACH MODE

The operating functions are controlled by the rotary encoder. The main cam wheel is rotated to the set point. Here, we shall explain the mechanism functions:

The main cam wheel is driven by the cam motor through cam gears (B) and (C).

5-1. DIRECT OPERATIONS RESULTING BY MOVEMENTS OF THE MAIN GEAR WHEEL

1) Pinch roller (Refer to Fig. 5-1)

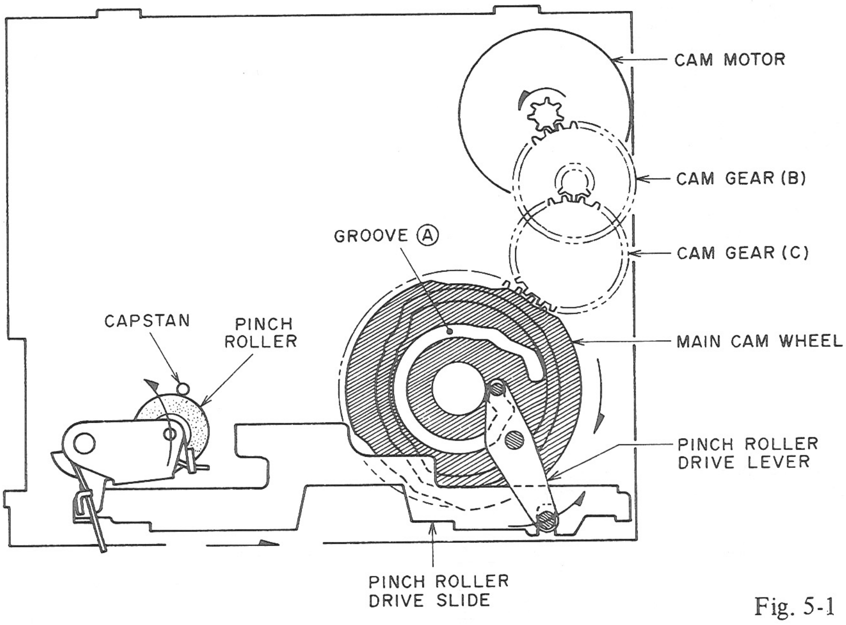
CAM MOTOR
CAM GEAR (B)
GROOVE Ⓐ
CAM GEAR (C)
CAPSTAN
PINCH ROLLER
MAIN CAM WHEEL
PINCH ROLLER DRIVE LEVER
PINCH ROLLER DRIVE SLIDE

Fig. 5-1

The main cam wheel's groove Ⓐ rived the pinch roller drive lever, pinch roller drive slide and the pinch roller.

When the pinch roller drive lever moves in the right direction, the reverse side's pinch roller moves to the left direction and the capstan contacts to the forward side's pinch roller.

2) Head base plate (Refer to Fig. 5-2)

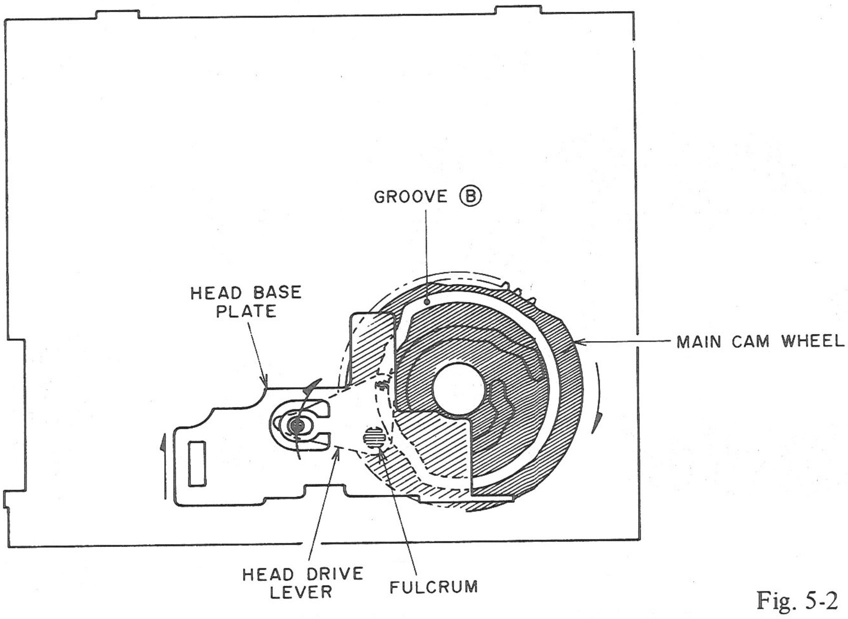
GROOVE Ⓑ
HEAD BASE PLATE
MAIN CAM WHEEL
HEAD DRIVE LEVER
FULCRUM

Fig. 5-2

The main cam wheel's groove Ⓑ drives the head drive lever and the head base plate. When the head base plate moves vertically, the REC/PB combination head moves vertically.

3) Head Rotation (Refer to Fig. 5-3)

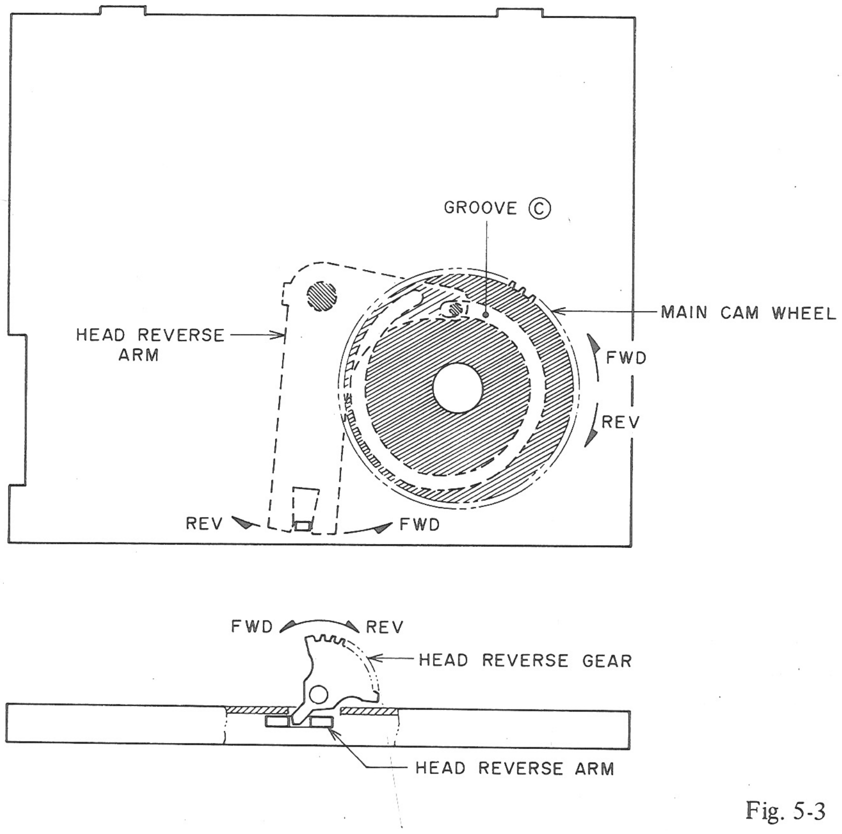
GROOVE ©
MAIN CAM WHEEL
HEAD REVERSE ARM
FWD
REV
REV
FWD
FWD
REV
HEAD REVERSE GEAR
HEAD REVERSE ARM

Fig. 5-3

The main cam wheel's groove © drives the head reverse arm and the head reverse gear.
The head rotates when the head reverse gear move.

In the reverse mode, the head moves from left to right.
In FWD mode, the head moves from right to left.

4) Brake and Reel Base (Refer to Figs. 5-4 to 5-7)

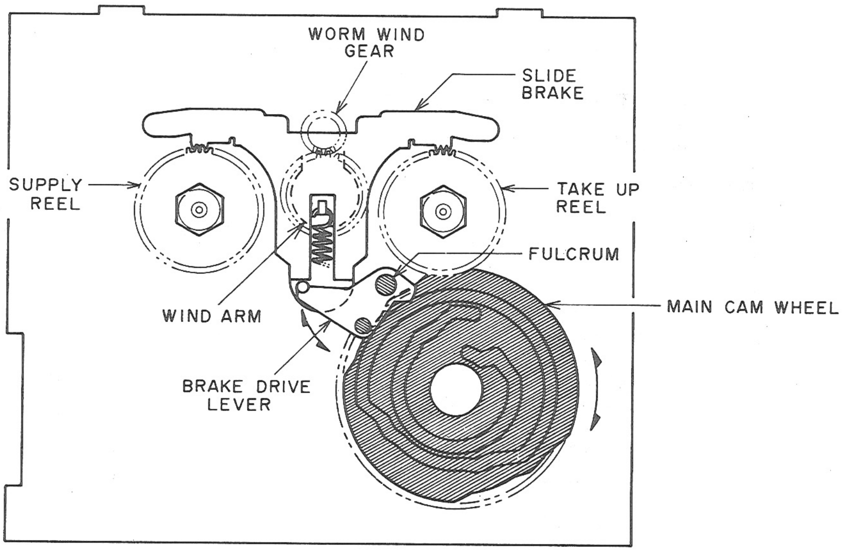
WORM WIND GEAR
SLIDE BRAKE
SUPPLY REEL
TAKE UP REEL
FULCRUM
MAIN CAM WHEEL
WIND ARM
BRAKE DRIVE LEVER

Fig. 5-4

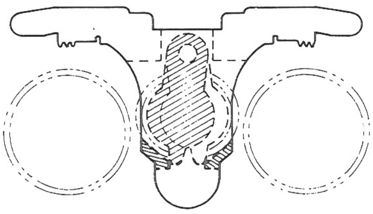

Fig. 5-5

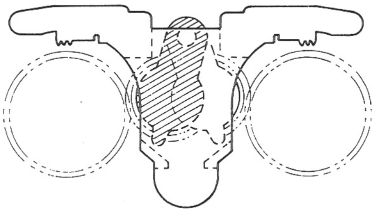

Fig. 5-6

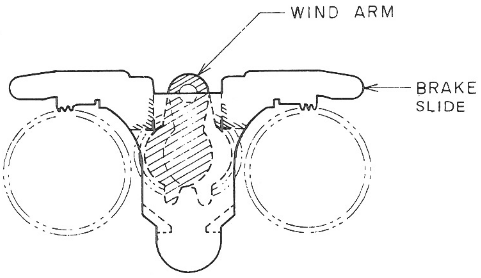
WIND ARM
BRAKE SLIDE

Fig. 5-7

The main cam wheel's external surface drives the brake drive lever and the slide brake.
The slide brake's position rotates the brake and the reel.

a. The slide brake at bottom position (Refer to Fig. 5-5)
Brake is applied on the reel (supply and take-up). Wind arm is released from the reel. (In stop condition).

b. The slide brake at top position (Refer to Fig. 5-6)
The brake is free from the reel. Wind arm is released from the reel. (ejected condition).

c. The slide brake at the middle position (Refer to Fig. 5-7)
The brake is not applied on the reel.
The wind arm and the reel base come into contact. The reel motor rotates the worm wind gear. The wind arm swings direction of left and right and rotates the reel base. (In play, FF, rewind and IPLS condition).

5-2. EJECT/LOADING OPERATION (Refer to Figs. 5-8 and 5-9)

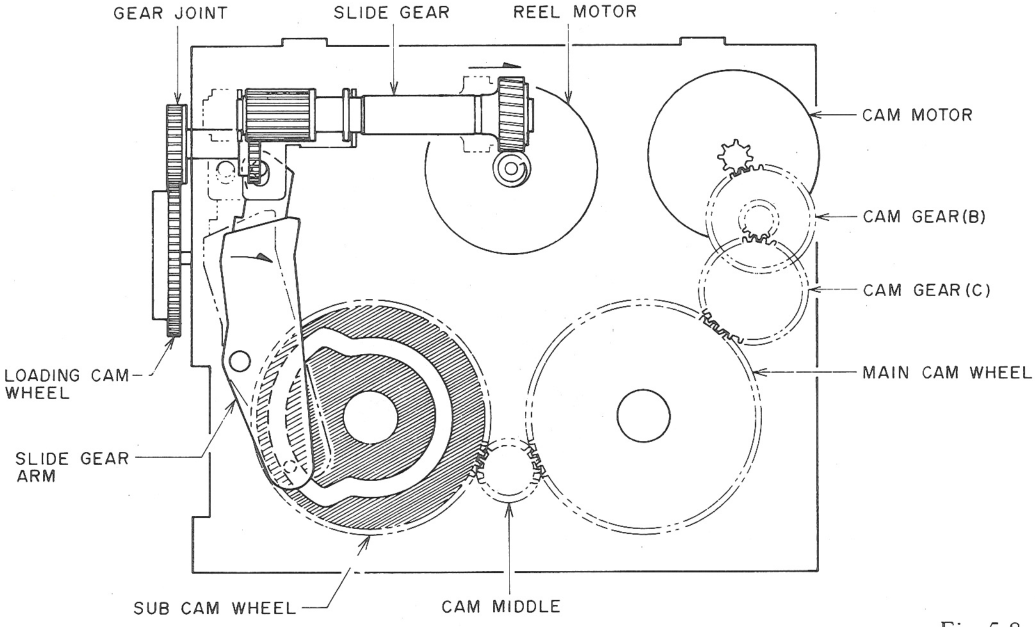
GEAR JOINT
SLIDE GEAR
REEL MOTOR
CAM MOTOR
CAM GEAR(B)
CAM GEAR(C)
MAIN CAM WHEEL
LOADING CAM WHEEL
SLIDE GEAR ARM
SUB CAM WHEEL
CAM MIDDLE

Fig. 5-8

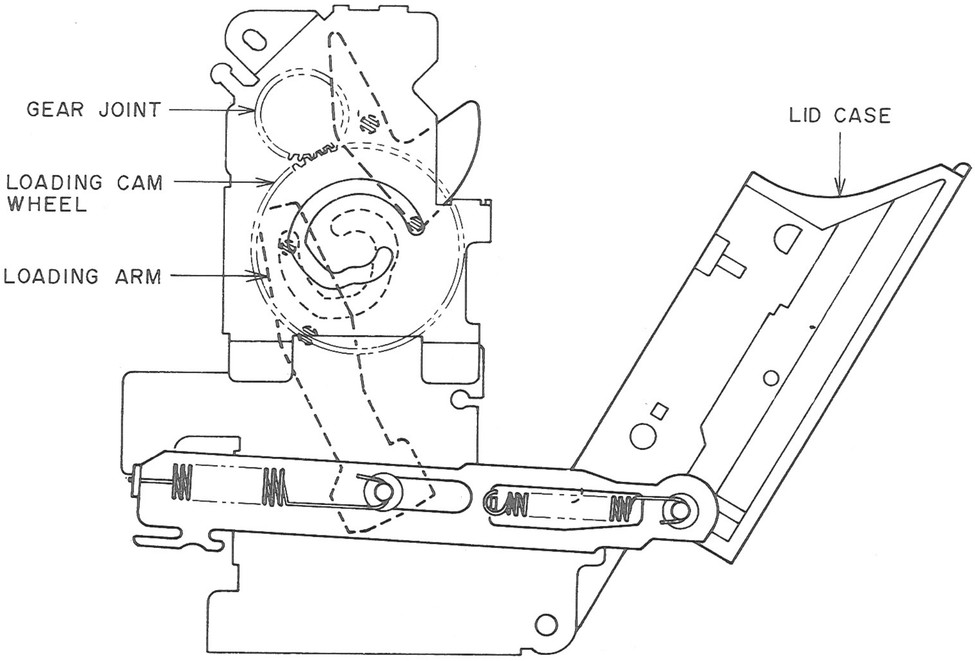

Fig. 5-9

The cam motor drives the cam gear B and C, the main gear, the cam middle and the sub-cam gear.
The slide gear arm and the slide gear move by rotating the sub-cam gear. The slide gear shifts from left to right during eject leading. (Front view).
It contacts with the worm wind gear and rotates the slide gear. The opening/closing of the lid case functions by the reel motor, worm wind gear, gear joint and the loading cam wheel. This in turn drives the loading arm and opens/closes the lid case. The slide gear contacts to the worm wind gear only at eject/loading.

VI. FIXING PROCEDURES FOR CAM WHEEL AND ROTARY ENCODE PCB

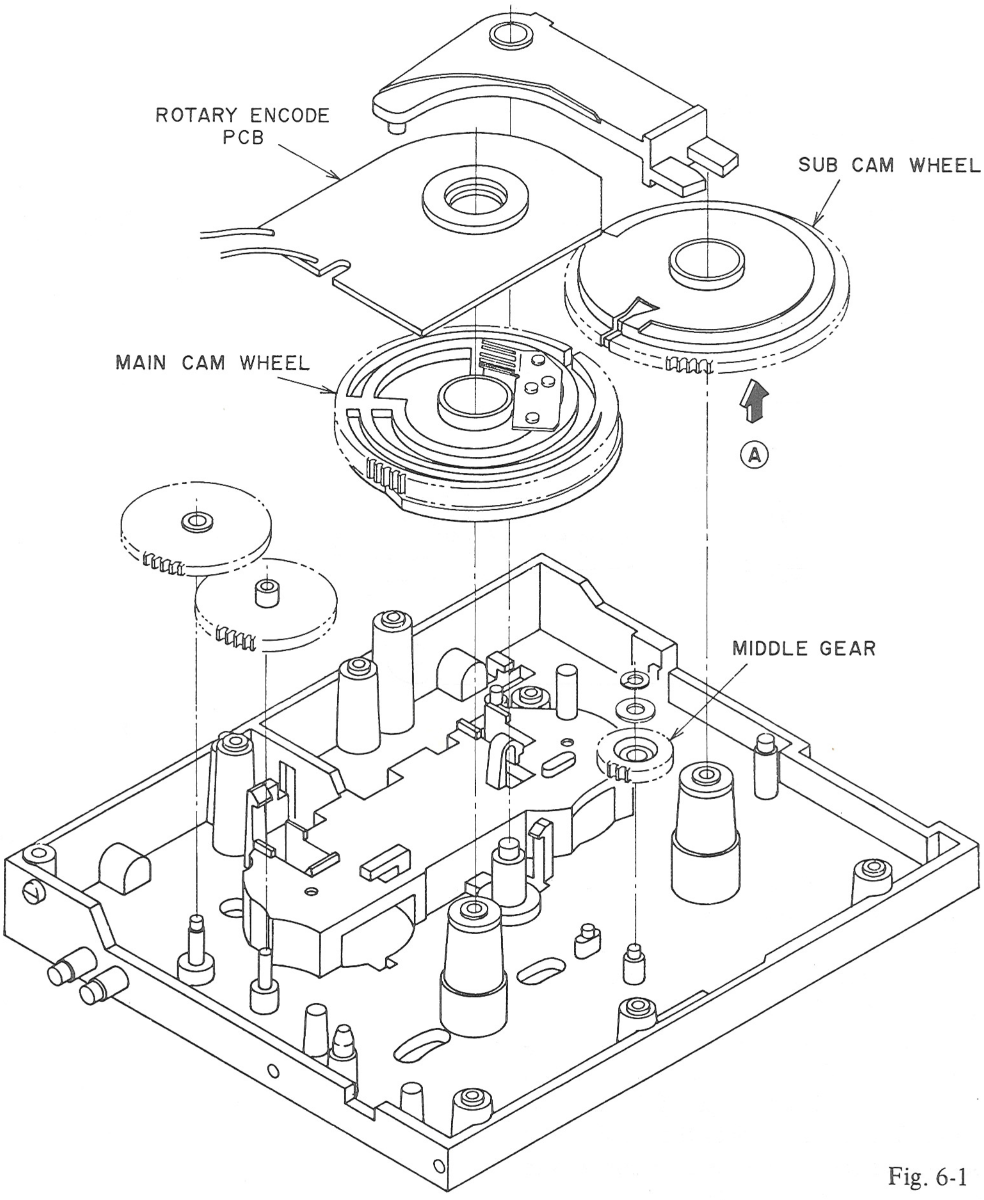
ROTARY ENCODE PCB
SUB CAM WHEEL
MAIN CAM WHEEL
Ⓐ
MIDDLE GEAR

Fig. 6-1

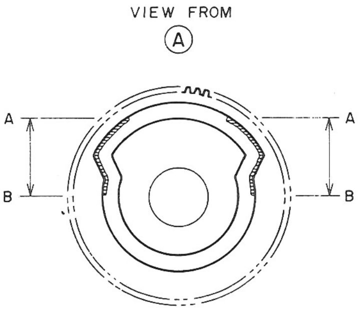
VIEW FROM
Ⓐ
A
A
B
B

Fig. 6-2

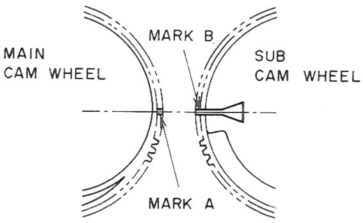
MAIN CAM WHEEL
MARK B
SUB CAM WHEEL
MARK A

Fig. 6-3

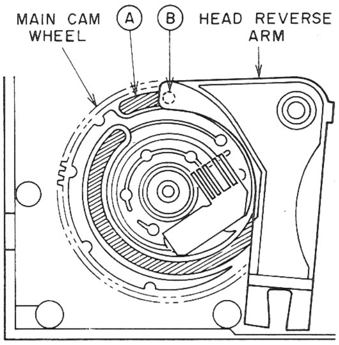
MAIN CAM WHEEL
Ⓐ
Ⓑ
HEAD REVERSE ARM

Fig. 6-4

1) Lock at SUB CAM WHEEL from direction Ⓐ (Fig. 6-1) and apply grease to areas A to B (the side of the groove shaded with oblique lines) as in Fig. 6-2.
2) Align marks (A) and (B) on MAIN CAM WHEEL and SUB CAM WHEEL and fix them on capstan holder as shown in Fig. 6-3.
3) Make sure that the marked positions on MAIN CAM WHEEL and SUB CAM WHEEL do not move, then fix MIDDLE GEAR on chassis.
4) Insert the head Reverse arm pin Ⓑ (see Fig. 6-1) into groove Ⓐ in MAIN CAM WHEEL as in Fig. 6-4.
5) When fixing the rotary encode PCB, check the pattern side is facing MAIN CAM WHEEL.

VII. MECHANICAL ADJUSTMENT

7-1. PINCH ROLLER PRESSURE MEASUREMENT

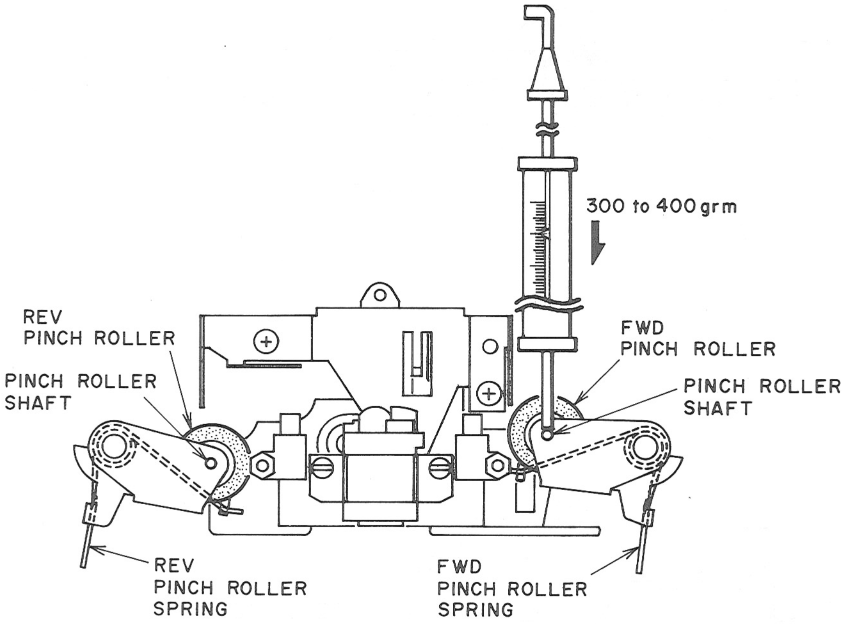
300 to 400grm
REV PINCH ROLLER
PINCH ROLLER SHAFT
FWD PINCH ROLLER
PINCH ROLLER SHAFT
REV PINCH ROLLER SPRING
FWD PINCH ROLLER SPRING

Fig. 7-1

Put in FWD PLAY Mode, Push Pinch roller shaft down with the spring gauge, and push the pinch roller 1 to 2 mm away from the capstan and release slowly.
Read the spring gauge at the moment the pinch roller touches the capstan and begins to rotate. Specified contact pressure measurement is 300 to 400 grams. If the correct measurement is not obtained, replace the pinch roller spring. Do the same for the reverse side.

7-2. WINDING TORQUE MEASUREMENT IN EACH MODE

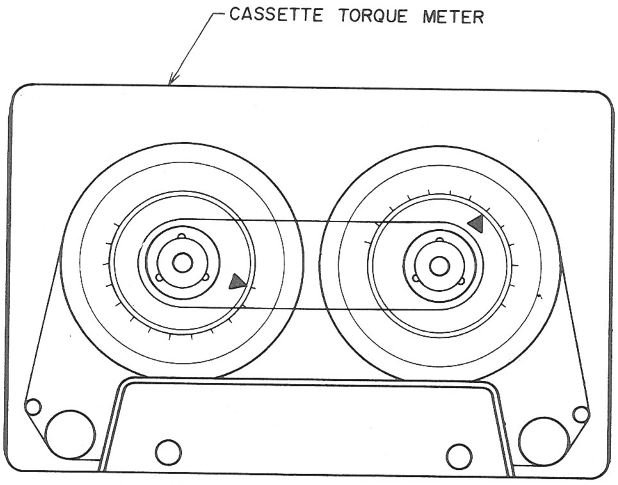
CASSETTE TORQUE METER

Fig. 7-2

Insert a cassette torque meter (AJ-751179) and measure in each mode, for Fast Forward and Rewind, measure at the end of the tape when the tape has stopped running.

Forward or Reverse mode
  Take up Torque: 40 ± 15 g-cm (25 to 55 g-cm)
  Back Tension Torque: 3^{+2}_{-1} g-cm (2 to 5 g-cm)

Fast Forward or Rewind mode
  Take up Torque: 120^{+130}_{-50} g-cm (70 to 250 g-cm)

7-3. TAPE SPEED ADJUSTMENT

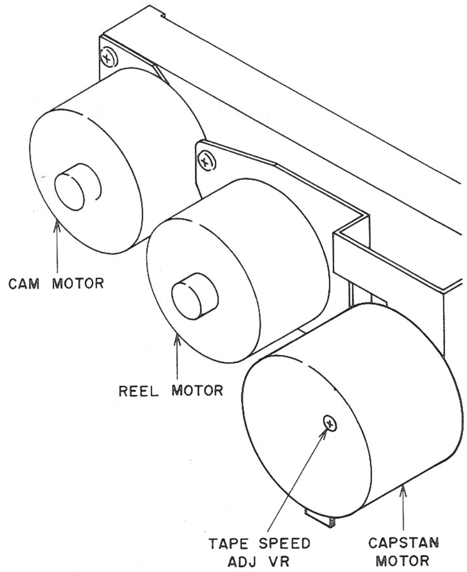
CAM MOTOR
REEL MOTOR
TAPE SPEED ADJ VR
CAPSTAN MOTOR

Fig. 7-3

1) Connect a frequency counter to Line output terminal.
2) Play back a 3150 Hz pre-recorded Test Tape (AT-751263) and adjust the Tape Speed Adjustment Variable Resistor to obtain a tape speed of 3150 Hz ± 30 Hz.

VIII. HEAD ADJUSTMENT

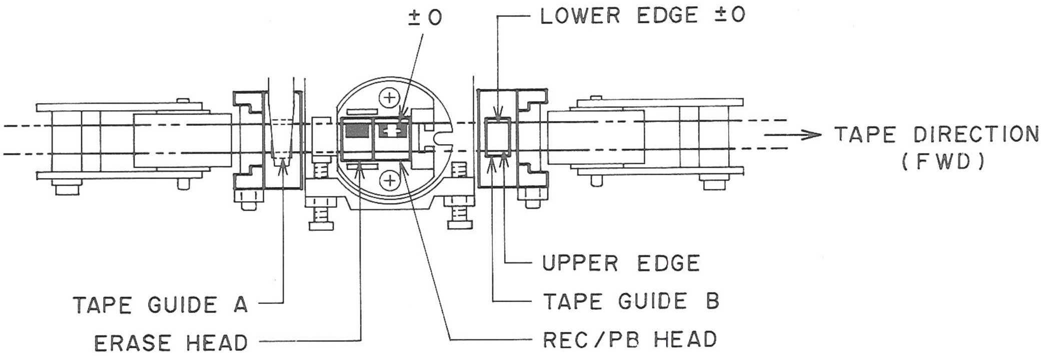

Fig. 8-1

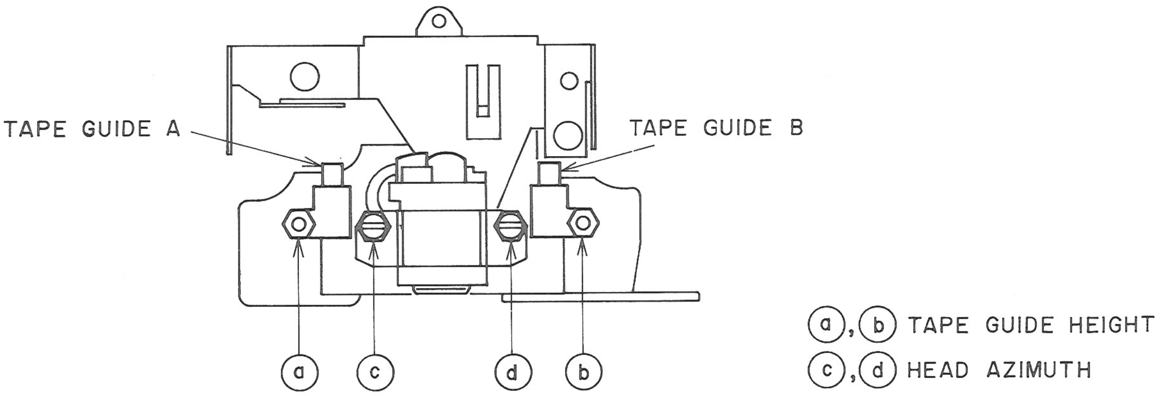

Fig. 8-2

8-1. TAPE GUIDE HEIGHT ADJUSTMENT

1) Use the mirror tape (AJ-751178) and adjust the tape guide height with turning the tape guide height adjustment nuts ⓐ and ⓑ so that when in FWD Play mode, the tape edge and the head edge match as in Fig. 8-1.
2) Play back the 315 Hz OVU (AT-750773) tape and adjust the tape guide height adjustment nuts ⓐ and ⓑ so that the difference in level between Lch on FWD and Lch on REV is within 0.5 dBm.
3) Play back the 1 kHz 4 Track (AT-750775) tape and adjust the tape guide height adjustment nuts ⓐ and ⓑ so that the difference in level between this and the 315 Hz tape in 2) is within 2.0 dBm.
4) Repeat 2) and 3) until the optimum condition is achieved.
5) Use the mirror tape and check that the tape runs smoothly (The tape edge should not catch on the tape guide and should not curl.) If the tape edge catches on the tape guide, move the tape guide height adjustment nuts ⓐ and ⓑ slowly until bhe tape runs smoothly.
6) After adjustment, check 2) and 3) again.
7) After adjustment, paintlock the tape guide height adjustment nuts ⓐ and ⓑ.

8-2. HEAD HEIGHT ADJUSTMENT

No adjustment is required for the height of the head itself. Follow the tape guide height adjustment procedures when the head is replaced and head height adjustment is required.

8-3. REC/PB HEAD AZIMUTH ALIGNMENT ADJUSTMENT

Play back the 10 kHz pre-recorded test tape (AT-750778) for head azimuth adjustment and adjust screw ⓒ for the FWD direction and screw ⓓ for the REV direction, so that the level on both channels is at maximum.

NOTES:

1. Be sure to clean the heads prior to head adjustment.
2. Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3. Be sure to demagnetize the heads with a head demagnetizer before and after head adjustment.

9-1. QUICK REVERSE SENSITIVITY ADJUSTMENT

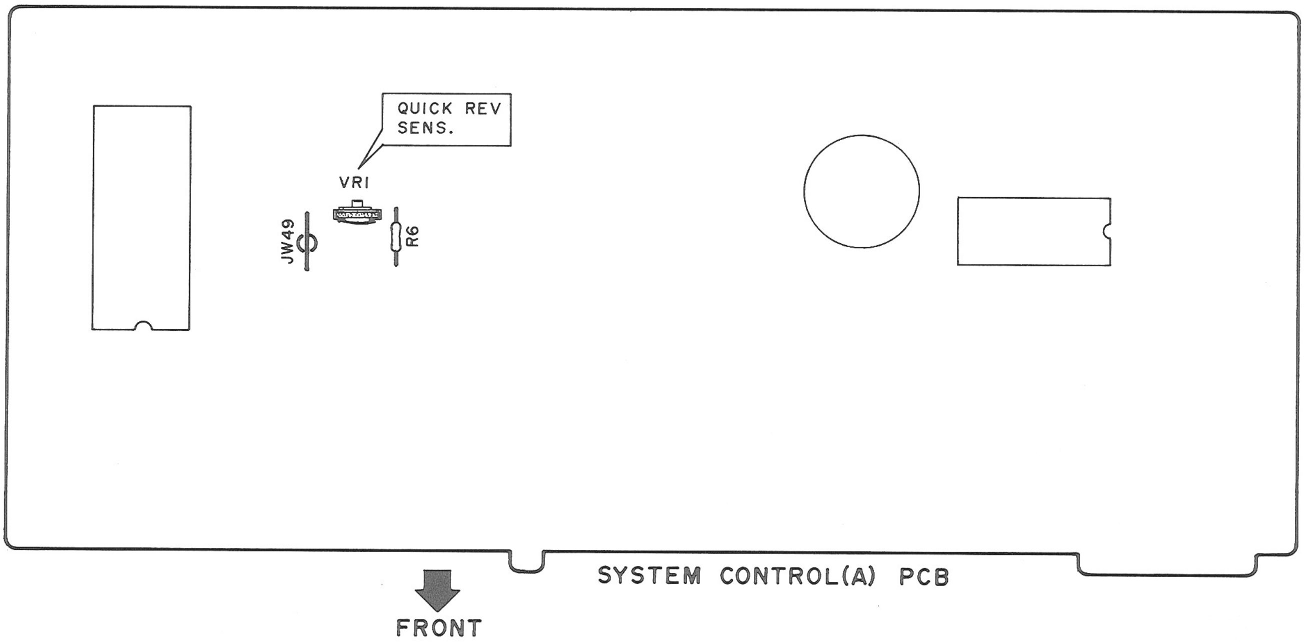
QUICK REV SENS.
VR1
JW49
R6
FRONT
SYSTEM CONTROL(A) PCB

Fig. 9-1

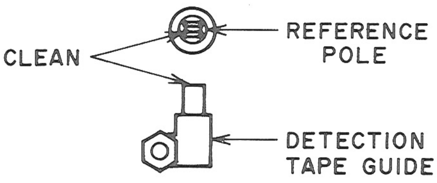
CLEAN
REFERENCE POLE
DETECTION TAPE GUIDE

Fig. 9-2

1) Make a tapeless cassette pack by removing the tape from the white colored test tape.
2) Connect a Digital Voltmeter between JW49 and GND.
3) Using the tapeless cassette pack, adjust VR1 so that the digital voltmeter reads 12 ± 0.3V DC at FWD play mode.
4) If the digital voltmeter reading is not increase to 12V DC at VR1 maximum.
   Remove the Resistor R6 (100K ohms) from SYSCON PC Board, and adjust VR1 as the same manner in item 3).

NOTE: Clean the reference pole and the Detection tape guide before adjustment. (Refer to Fig. 9-2).

9-2. PRE AMP ADJUSTMENT

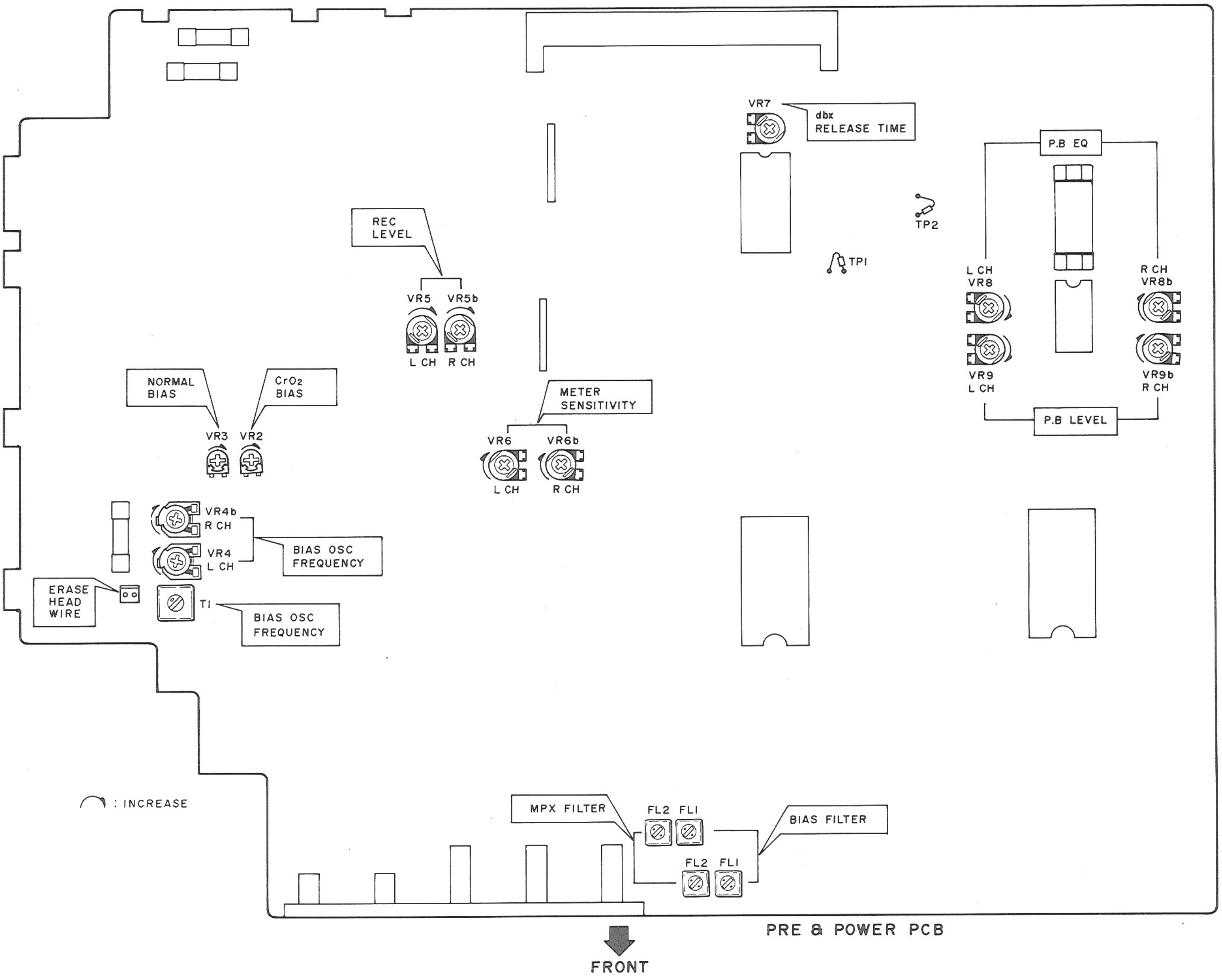
VR7
dbx RELEASE TIME
P.B EQ
TP2
TP1
REC LEVEL
VR5
VR5b
L CH
R CH
L CH
VR8
R CH
VR8b
VR9
L CH
VR9b
R CH
P.B LEVEL
NORMAL BIAS
CrO2 BIAS
METER SENSITIVITY
VR3
VR2
VR6
VR6b
L CH
R CH
VR4b
R CH
VR4
L CH
BIAS OSC FREQUENCY
ERASE HEAD WIRE
T1
BIAS OSC FREQUENCY
: INCREASE
MPX FILTER
FL2
FL1
BIAS FILTER
FL2
FL1
PRE & POWER PCB
FRONT

Fig. 9-3

Step	Adjustment Item	Test Tape & Supply Signal	Mode	Adjustment Part	Result	Remarks
1	P.B LEVEL	315 Hz	FWD P.B	VR9	−6.0 ± 0.2 dBm	
			REV P.B	NONE	−6.0 ± 0.2 dBm	Confirmation
2	P.B EQ	10 kHz −15 dBm	FWD P.B	VR8	−21.0 ± 0.3 dBm	
			REV P.B	NONE	−21.0 ± 0.3 dBm	Confirmation
3	BIAS OSC FREQUENCY	METAL BLANK TAPE	REC/P.B	T1	100kHz ± 1.5kHz	Connect a Frequency Counter to ERASE HEAD WIRE.
4	NORMAL BIAS	NORMAL BLANK TAPE 1 kHz, 10 kHz −26.0 dBm	REC/P.B	VR4	1 kHz, 10 kHz Flat ±0.5 dBm	

Step	Adjustment Item	Test Tape & Supply Signal	Mode	Adjustment Part	Result	Remarks
5	CrO_2 BIAS	CrO_2 BLANK TAPE 1 kHz, 10 kHz –26.0 dBm	REC/P.B	VR3	1 kHz, 10 kHz Flat ±0.5 dBm	
6	METAL BIAS	METAL BLANK TAPE 1 kHz, 10 kHz –26.0 dBm	REC/P.B	VR2	1 kHz, 10 kHz Flat ±0.5 dBm	
7	REC LEVEL	NORMAL BLANK TAPE 315 Hz –6.0 dBm	REC/P.B	VR5	–6.0 ± 0.5 dBm	
8	METER SENSITIVITY	BLANK TAPE 1 kHz –6.0 dBm	REC/PAUSE	VR6	0VU indication	
9	dbx Release time	BLANK TAPE 1 kHz –6.0 dBm	REC/PAUSE	VR7	15.0 ± 0.2 mV	Connect a Digital Voltmeter between TP1 and TP2.
10	BIAS LEAK (SEE NOTE 2)	NORMAL BLANK TAPE NO SIGNAL	REC/P.B	FL1	Less than –40 dBm	
11	MPX FILTER (SEE NOTE 2)	19 kHz –6.0 dBm	REC/PAUSE	FL2	Less than –30 dBm	MPX FILTER SWITCH ON

NOTES:

1. Set to the DOLBY-NR switch to OFF position for all the adjustments.
2. The adjustments in step 10 and 11 are not needed in normal condition, nor when FL1, FL2 are replaced with a new one.
   However, follow the instructions in steps 10 and 11, incase they (ON PRE & POWER PCB) are misadjust.
3. Use the following cassette measuring tapes.

NORMAL TAPE	:	MAXELL	UDI	C-60
CrO_2 TAPE	:	TDK	SA	C-60
METAL TAPE	:	TDK	MA	C-60

X. PC BOARD TITLES AND IDENTIFICATION NUMBERS

PC Board Title		P.C Board Number
SYSTEM CONTROL (A)	PC BOARD	T2074A501A
METER	PC BOARD	T2074A501B
SYSTEM CONTROL (D)	PC BOARD	T2074A501D
PRE AMP & POWER SUPPLY	PC BOARD	T2074A502A
HEADPHONE	PC BOARD	T2-74A502B
POWER SW	PC BOARD	T2074A502C
LOADING	PC BOARD	T2074D5030
ROTARY ENCODER	PC BOARD	CMR30B5010
CONTROL (B) A	PC BOARD	CMR30C510A
CONTROL (B) B	PC BOARD	CMR30C510B
LEAF SW	PC BOARD	CMR30C5030

SECTION 2

PARTS LIST

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10. HEAD PHONE PC BOARD 28
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Resistors and Capacitors which are not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description of each part. If any of this information is omitted, there are instances in which parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because part numbers and part definitions and supply in the Preliminary Parts List may have been the subject of changes, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows those parts which are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts" from which these parts should be selected and parts.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the parts list
   a) Mechanism Block
   b) P.C Board Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20×03STL CMT
2-4	ZS-536488	BID20×08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

6. SYS. CON. P C BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

5. The kind of part and its installation position can both be determined by the Part Number. To determine where a part number is listed, utilize the Parts Index at the end of the Parts List. It is necessary first of all to find the Part Number. This can be accomplished by using the Reference Number listed at the right of the part number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

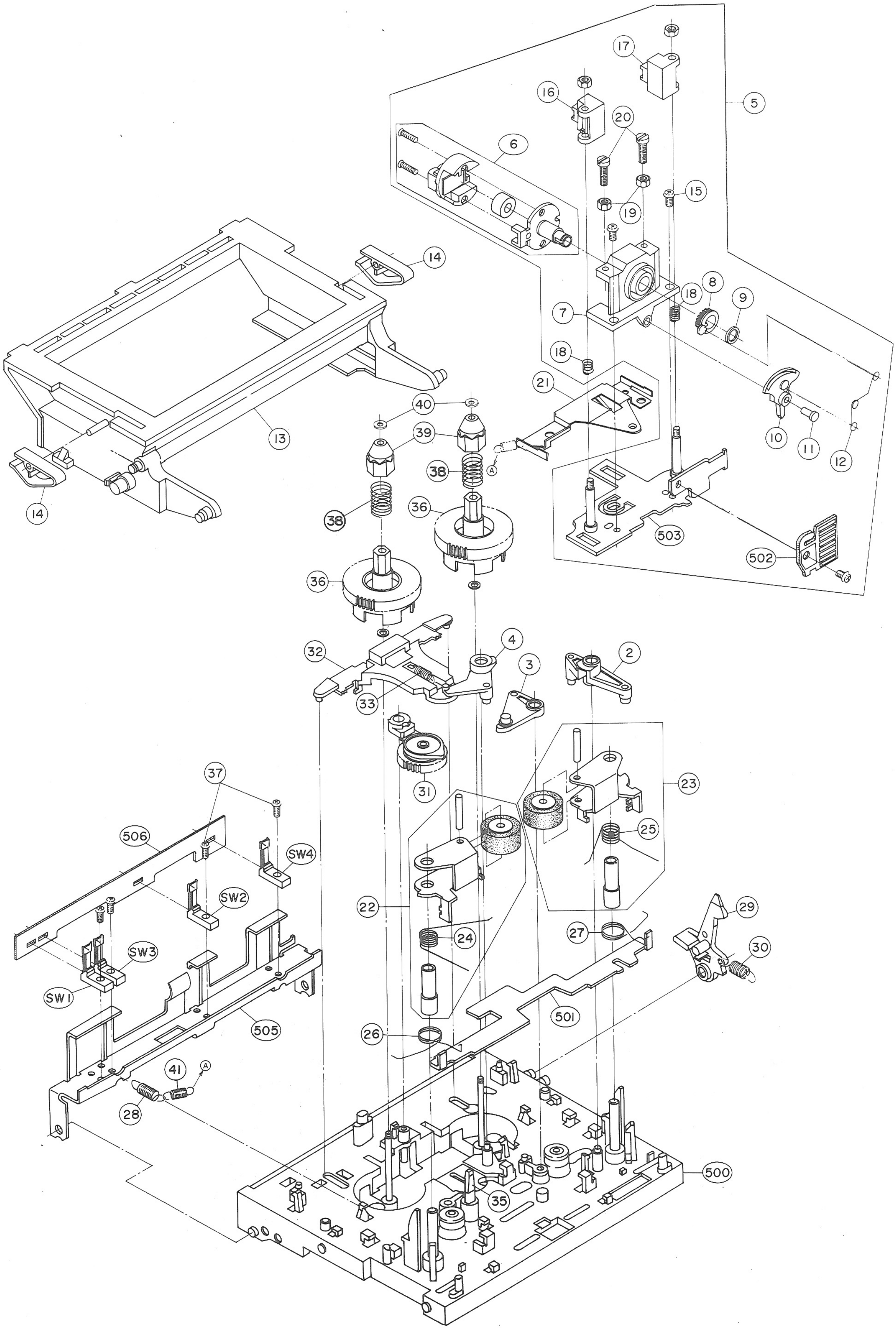
NO.		PART NO.	DESCRIPTION
1	N	BH-T2068A430C	PLATE ROTARY BLK CMR33
2		BL-T2068A380A	ARM PINCH ROLLER L BLK CMR31
3		BL-T2068A390A	ARM PINCH ROLLER R BLK CMR31
4		BM-B354697	MOTOR CAM PART CMR30
5		BM-B354716	MOTOR CAPSTAN PART CMR30
6		BM-B354714	MOTOR REEL PART CMR30
7	N	BT-355306	⚠ TRANS POWER T2076 (U)
8	N	BT-355309	⚠ TRANS POWER T2076 (A,C)
9	N	BT-355311	⚠ TRANS POWER T2076 (B,S)
10	N	BT-355310	⚠ TRANS POWER T2076 (E,V)
11	N	BT-355308	⚠ TRANS POWER T2076 (J)
12		BZ-T2045A040A	GUIDE DETECTION BLK HX-R5
13		ED-345555	⚠ D SILICON DBB10C 200/1.0A
14		ED-349662	⚠ D SILICON DS135E-FA6 F10 100/1.0A
15		ED-309341	D GERMA H 1K34A
16		ED-344244	D LED SLF601C AMBER
17		ED-301911	D SILICON H DS448
18		ED-344280	D SILICON H GMA-01-FY2 F05
19		ED-306109	D SILICON W03B 100/1.0A
20		ED-328486	D ZENER H HZ15 3
21		ED-329056	D ZENER H HZ22 2
22		ED-346455	D ZENER H HZ7FA F10 A1
23	N	ED-346458	D ZENER H HZ7FA F10 B1
24		ED-337776	D ZENER H HZ3 C1
25		ED-329058	D ZENER H HZ5 C1
26		ED-331197	D ZENER H HZ6 C1
27		ED-319167	D ZENER H HZ6 C3
28	N	ED-355379	D ZENER H HZ6FA F10 C1,2
29		ED-346604	D ZENER H HZ7 B2
30		ED-346607	D ZENER H HZ9 B1
31	N	ED-355471	D ZENER V HZ16LS7 F05 3
32		ED-348023	D ZENER V HZ5B-1S7
33	N	ED-348024	D ZENER V HZ5B-2S7
34		ED-345027	D ZENER V HZ5C-3S7
35	N	ED-348032	D ZENER V HZ7A-3S7
36		EF-358974	⚠ FUSE BET T 250V 0.63A [B]
37		EF-359342	⚠ FUSE BET T 400MA 250V [B]
38		EF-318608	⚠ FUSE GGS A 250V 1.00A [U,J,C,A]
39		EF-668474	⚠ FUSE SEMKO T 400MA 250V [E,V,S]
40		EF-601942	⚠ FUSE SEMKO T 639MA 250V [E,V,S]
41		EH-328491	FILTER DB D07-003K 100KHZ
42		EH-328490	FILTER DB Z07-001K 19KHZ
43		EI-354822	IC AN6291
44		EI-349196	IC HA12058
45		EI-356327	IC HA12067
46		EI-337013	IC LB1290
47		EI-355602	IC LB1649
48		EI-337009	IC LC4049B
49		EI-338171	IC LC4069UB
50		EI-337008	IC LC7800
51	N	EI-355350	IC M50740A-430SP
52		EI-357498	IC M51143AL
53	N	EI-355134	IC M5201L
54		EI-353227	IC M5216L
55		EI-337228	IC M5218L
56	N	EI-355115	IC M5240P
57		EI-304657	IC TC4011BP
58		EI-305456	IC TC4049BP
59		EI-349372	OSC CE CSA4.00MG 4MHZ
60	N	EM-355326	IND FL BG-290Z
61		EO-337055	COIL VARI 1 FE002S 10MH
62		EQ-337067	RELAY LEAD LAB2NS 2NO 18V
63		ER-331188	⚠ R FUSE ERD2FC S10 1/4W 8R2J
64		ER-328278	⚠ R FUSE ERD2FC 1/4W 10R0G
65		ES-358581	⚠ SW PUSH J-U3065 01-1
66	N	ES-359606	⚠ SW SELECTOR ST-41S0454 01-4 [U]
67		ES-354767	SW LEAF BSW-243
68		ES-354849	SW LEAF BSW-47BRC-1
69		ES-354850	SW LEAF MSW-1273NBK
70	N	ES-355227	SW PUSH SPUY54 5THROW
71	N	ES-355332	SW SLIDE SSY02 2-02-02N
72		ES-355604	SW TACT B3F-1020
73		ET-345626	⚠ TR 2SA1248 S,T
74		ET-316523	⚠ TR 2SC1844 F
75		ET-345625	⚠ TR 2SC3116 S,T
76		ET-345091	PHOTO SENSOR SPI-201-40 B,C
77		ET-308472	TR 2SA1115 E,F,G
78		ET-348950	TR 2SA1345
79		ET-349605	TR 2SA1346
80		ET-349626	TR 2SA1347
81		ET-349725	TR 2SA1391 S,T
82		ET-308141	TR 2SC2603 G
83		ET-349883	TR 2SC3243 D,E
84		ET-349080	TR 2SC3382 S,T
85		ET-349081	TR 2SC3383 S,T
86		ET-350795	TR 2SC3399
87		ET-349592	TR 2SC3400
88		ET-338324	TR 2SD1012-V H
89		ET-310148	TR 2SD612K E,F
90		EV-356579	R S-FIX H H0615C 3P 102
91		EV-356576	R S-FIX H H0615C 3P 472
92		EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
93		EV-338464	R S-FIX H V8K4-11(1S) 3P 103
94		EV-357837	R S-FIX H V8K4-11(1S) 3P 104
95	N	EV-355380	R S-FIX H V8K4-11(1S) 3P 202
96		EV-338463	R S-FIX H V8K4-11(1S) 3P 203
97		EV-338462	R S-FIX H V8K4-11(1S) 3P 503
98		EV-522652	R S-FIX V V8K1-1 3P 105
99	N	EV-355389	VR SLIDE VJ2013-2GPVN 10C B103
100	N	EV-355232	VR SLIDE VJ8012 G PVN 15B A104
101	N	EV-355231	VR SLIDE 35P2SVOJ 1Z104
102		HZ-354673	GEAR ROTARY
103		HZ-354675	LEVER GEAR REVERSE
104		MB-354707	BELT CAPSTAN (A)
105		MI-354706	FLYWHEEL
106		ML-B354723	ARM WIND PART CMR30
107		MZ-354737	CAM WHEEL LOADING
108		MZ-B354735	CAM WHEEL MAIN PART CMR30
109		MZ-354733	CAM WHEEL SUB
110		MZ-354682	GEAR CAM (B)
111		MZ-354683	GEAR CAM (C)
112		MZ-354762	GEAR JOINT
113		MZ-354684	GEAR MIDDLE
114		MZ-B354689	GEAR SLIDE PART CMR30
115		MZ-354715	GEAR WORM WIND

"NOTE" N: New Parts

SYMBOL FOR DESTINATION

[A] : AAL (U.S.A)
[B] : UK (England)
[C] : CSA (Canada)
[E] : CEE (Europe)
[J] : JPN (Japan)
[S] : SAA (Australia)
[U] : U/T (Universal Area)
[V] : VDE (West Germany)

MECHA CMR33 BLOCK (1)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SW1
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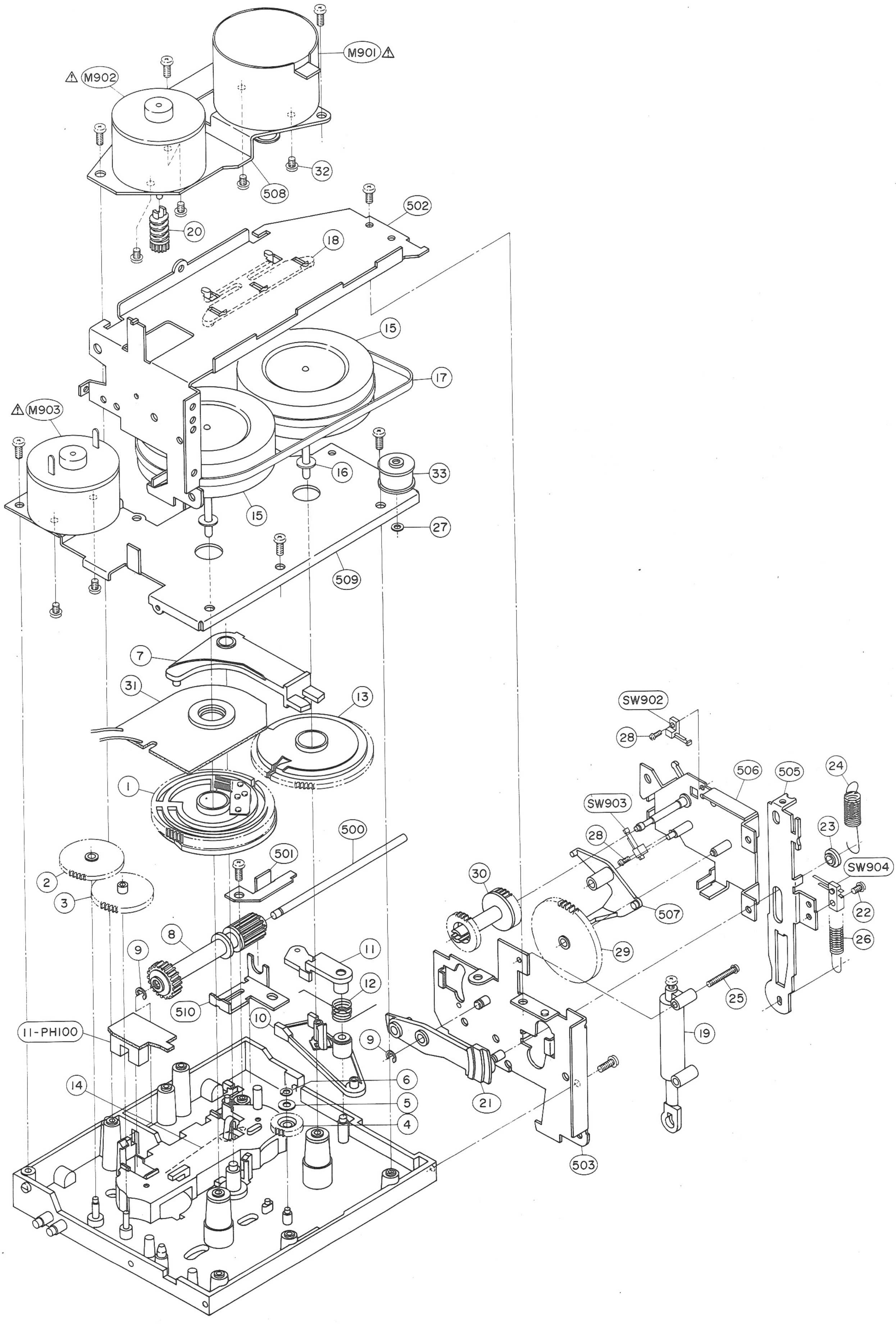
500
35

1. MECHA CMR33 BLOCK (1)

REF. NO.	PART NO.	DESCRIPTION
1-1	BB-T2068A300D	MECHA CMR33 BLK
1-2	ML-354699	LEVER PINCH ROLLER DRIVE
1-3	ML-354700	LEVER HEAD DRIVE
1-4	ML-354701	LEVER BRAKE DRIVE
1-5	BH-T2068A370D	HEAD BLK CMR 33
1-6	BH-T2068A430C	PLATE ROTARY BLK CMR33
1-7	HZ-354764B	HOLDER HEAD (B)
1-8	HZ-354673	GEAR ROTARY
1-9	ZW-354674	PW38×055×050PSL
1-10	HZ-354675	LEVER GEAR REVERSE
1-11	HZ-354676	PROP GEAR REVERSE
1-12	ZG-354745	SP TORSION ROTARY
1-13	BD-B359140	LID CASE (B) PART
1-14	ZG-336615	SP PLATE CASSETTE HOLDER (B)
1-15	ZS-417161	PAN23×04STL CMT
1-16	BZ-T2045A040A	GUIDE DETECTION BLK HX-R5
1-17	HZ-344093	GUIDE TAPE
1-18	ZG-344012	SP PUSH GUIDE TAPE
1-19	ZW-618884	N20STL CMT 1
1-20	ZS-344001	SCREW AZIMUTH
1-21	ZG-354749	SP PLATE HEAD PUSH
1-22	BL-T2068A380A	ARM PINCH ROLLER L BLK CMR31
1-23	BL-T2068A390A	ARM PINCH ROLLER R BLK CMR31
1-24	ZG-354750	SP TORSION PINCH ROLLER (L)
1-25	ZG-354751	SP TORSION PINCH ROLLER (R)
1-26	ZG-354752	SP TORSION RETURN (L)
1-27	ZG-354753	SP TORTION RETURN (R)
1-28	ZG-359409	SP PULL HOLDER LEAF
1-29	ML-354754	ARM LOCK LOADING
1-30	ZG-357749	SP T6-04.0/0.40-16.0 T6-111
1-31	ML-B354723	ARM WIND PART CMR30
1-32	MZ-354734	SLIDE BRAKE
1-33	ZG-357808	SP T6-03.2/0.29-11.2 T6-059
1-34	ZW-305546	PW21×040×025PSL
1-35	MH-354679	PROP REFRENCE
1-36	MR-359138	PULLEY REEL (B)
1-37	ZS-460440	PAN20×04STL CMT
1-38	ZG-354718	SP PUSH BT (B)
1-39	MT-349681	REEL RETAINER (B)
1-40	ZW-343120	PW17×040×025PSL
1-41	ZG-355133	SP PULL EARTH
1-SW1	ES-354767	SW LEAF BSW-243
1-SW2	ES-354767	SW LEAF BSW-243
1-SW3	ES-354767	SW LEAF BSW-243
1-SW4	ES-354767	SW LEAF BSW-243

NOTE: Parts listed in 1 to SW4 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

MECHA CMR33 BLOCK (2)


M901 ⚠
⚠ M902
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⚠ M903
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13
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503

2. MECHA CMR33 BLOCK (2)

REF. NO.	PART NO.	DESCRIPTION
	MECHA CMR33 BLOCK	
2-1	MZ-B354735	CAM WHEEL MAIN PART CMR30
2-2	MZ-354682	GEAR CAM (B)
2-3	MZ-354683	GEAR CAM (C)
2-4	MZ-354684	GEAR MIDDLE
2-5	ZW-300885	PW23x060x020PBR
2-6	ZW-340648	RING CS 190STL PKR
2-7	ML-354685	ARM HEAD REVERSE
2-8	MZ-B354689	GEAR SLIDE PART CMR30
2-9	ZW-270088	RING E190SUP CMT
2-10	ML-354691	ARM GEAR SLIDE (A)
2-11	ML-354692	ARM GEAR SLIDE (B)
2-12	ZG-354747	GEAR TORSION ARM SLIDE
2-13	MZ-354733	CAM WHEEL SUB
2-14	ZG-355016	SP TORSION EARTH
2-15	MI-354706	FLYWHEEL
2-16	ZW-536466	PW21x070x050NYL
2-17	MB-354707	BELT CAPSTAN (A)
2-18	MZ-354709	HOLDER THRUST
2-19	MZ-344099	DAMPER ASSY
2-20	MZ-354715	GEAR WORM WIND
2-21	ML-B354710	ARM LOADING PART CMR30
2-22	ZS-328606	PAN20x30STL CMT
2-23	SZ-354719	COLLAR LOADING
2-24	ZG-354757	SP PULL LOADING
2-25	ZS-343113	ST PAN20x12STL CMT
2-26	ZG-354759	SP PULL LID LOCK
2-27	ZW-343120	PW17x040x025PSL
2-28	ZS-477876	PAN20x03STL CMT
2-29	MZ-354737	CAM WHEEL LOADING
2-30	MZ-354762	GEAR JOINT
2-31	EA-354860	PC ROTARY ENCODER
2-32	ZS-592378	PAN26x035STL CMT
2-33	MR-B354695	PULLEY MIDDLE PART CMR30
2-M901	BM-B354716	⚠ MOTOR CAPSTAN PART CMR30
2-M902	BM-B354714	⚠ MOTOR REEL PART CMR30
2-M903	BM-B354697	⚠ MOTOR CAM PART CMR30
2-SW902	ES-354850	SW LEAF MSW-1273NBK
2-SW903	ES-354850	SWLEAF MSW-1273NBK
2-SW904	ES-354849	SW LEAF BSW-47BRC-1
	CONTROL (B) B PC BOARD	
11-PH100	ET-345091	PHOTO SENSOR SPI-201-40 B,C

NOTE: Parts listed in 1 to SW904 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

3. PC BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
3-1A	BA-T2074A020B	PC PRE & POWER BLK GX-R60(U) [EXCEPT J]
3-1B	BA-T2074A020D	PC PRE & POWER BLK GX-R60(J) [J]
3-2	BA-T2074A030B	PC SYSCON/METER BLK GX-R60

NOTES: (1) PC PRE & POWER BLK consists of following PC BOARDS.

- PRE AMP & POWER SUPPLY PC BOARD
- HEAD PHONE PC BOARD
- POWER SW PC BOARD

(2) PC SYSCON/METER BLK consists of following PC BOARDS.

- SYSTEM CONTROL (A) PC BOARD
- SYSTEM CONTROL (D) PC BOARD
- METER PC BOARD

4. PRE AMP & POWER SUPPLY PC BOARD

REF. NO.	PART NO.	DESCRIPTION
		PRE AMP & POWER SUPPLY PC BOARD
4-IC4	EI-337228	IC M5218L
4-IC7	EI-357498	IC M51143AL
4-IC8	EI-305456	IC TC4049BP
4-IC9	EI-354822	IC AN6291
4-IC10	EI-355134	IC M5201L
4-IC11	EI-353227	IC M5216L
4-IC12	EI-349196	IC HA12058
4-IC13	EI-355115	IC M5240P
4-TR15	ET-349080	TR 2SC3382 S,T
4-TR18	ET-349592	TR 2SC3400
4-TR19	ET-310148	TR 2SD612K E,F
4-TR20,21	ET-349081	TR 2SC3383 S,T
4-TR22,23	ET-349592	TR 2SC3400
4-TR26,27	ET-349883	TR 2SC3243 D,E
4-TR29	ET-349725	TR 2SA1391 S,T
4-TR30	ET-349080	TR 2SC3382 S,T
4-TR31	ET-345626	⚠ TR 2SA1248 S,T
4-TR32	ET-345625	⚠ TR 2SC3116 S,T
4-TR33	ET-349080	TR 2SC3382 S,T
4-TR34	ET-349725	TR 2SA1391 S,T
4-TR35	ET-349080	TR 2SC3382 S,T
4-TR36,37	ET-349725	TR 2SA1391 S,T
4-TR38	ET-349080	TR 2SC3382 S,T
4-TR39	ET-349080	⚠ TR 2SC3382 S,T
4-TR40	ET-316523	⚠ TR 2SC1844 F
4-TR41	ET-349080	TR 2SC3382 S,T
4-TR42	ET-345625	⚠ TR 2SC3116 S,T
4-TR43	ET-349080	TR 2SC3382 S,T
4-TR44	ET-345625	⚠ TR 2SC3116 S,T
4-TR45	ET-349080	TR 2SC3382 S,T
4-TR46	ET-308141	⚠ TR 2SC2603 G
4-TR47	ET-308472	TR 2SA1115 E,F,G
4-TR48	ET-310148	⚠ TR 2SD612K E,F
4-TR49,50	ET-349081	TR 2SC3383 S,T
4-TR51	ET-349605	TR 2SA1346
4-TR52	ET-349592	TR 2SC3400
4-TR53to55	ET-349080	TR 2SC3382 S,T
4-TR60	ET-349080	TR 2SC3382 S,T
4-TR61to63	ET-349081	TR 2SC3383 S,T
4-TR64	ET-349080	TR 2SC3382 S,T
4-TR65,66	ET-349605	TR 2SA1346
4-TR67,68	ET-349081	TR 2SC3383 S,T
4-TR69	ET-349605	TR 2SA1346
4-TR70	ET-349592	TR 2SC3400
4-TR71	ET-338324	TR 2SD1012-V H
4-TR72to74	ET-349080	TR 2SC3382 S,T
4-TR75	ET-349725	TR 2SA1391 S,T
4-TR76	ET-349080	TR 2SC3382 S,T
4-TR77,78	ET-349081	TR 2SC3383 S,T
4-D6	ED-346604	D ZENER H HZ7 B2
4-D10	ED-301911	D SILICON H DS448
4-D15to18	ED-349662	⚠ D SILICON DS135E-FA6 F10 100/1.0A
4-D19	ED-345555	⚠ D SILICON DBB10C 200/1.0A
4-D20,21	ED-348024	D ZENER V HZ5B-2S7
4-D22	ED-319167	D ZENER H HZ6 C3
4-D23	ED-345555	⚠ D SILICON DBB10C 200/1.0A
4-D24	ED-301911	D SILICON H DS448
4-D25	ED-329056	D ZENER H HZ22 2
4-D26	ED-355471	D ZENER V HZ16LS7 F05 3
4-D27	ED-319167	D ZENER H HZ6 C3
4-D28	ED-344280	D SILICON H GMA-01-FY2 F05
4-D29	ED-348032	D ZENER V HZ7A-3S7
4-D30	ED-345027	D ZENER V HZ5C-3S7
4-D31to36	ED-301911	D SILICON H DS448
4-D37	ED-309341	D GERMA H 1K34A
4-D38,39	ED-355379	D ZENER H HZ6FA F10 C1,2
4-D40	ED-348023	D ZENER V HZ5B-1S7
4-D41	ED-344280	D SILICON H GMA-01-FY2 F05
4-D42	ED-301911	D SILICON H DS448
4-D43	ED-329058	D ZENER H HZ5 C1
4-SW1	ES-355227	SW PUSH SPUY54 5THROW
4-VR1	EV-355232	VR SLIDE VJ8012 G PVN 15B A104
4-VR2	EV-356579	R S-FIX H H0615C 3P 102
4-VR3	EV-356576	R S-FIX H H0615C 3P 472
4-VR4	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
4-VR5	EV-338463	R S-FIX H V8K4-11(1S) 3P 203
4-VR6	EV-357837	R S-FIX H V8K4-11(1S) 3P 104
4-VR7	EV-355380	R S-FIX H V8K4-11(1S) 3P 202
4-VR8	EV-338464	R S-FIX H V8K4-11(1S) 3P 103
4-VR9	EV-338462	R S-FIX H V8K4-11(1S) 3P 503
4-FL1	EH-328491	FILTER DB D07-003K 100KHZ
4-FL2	EH-328490	FILTER DB Z07-001K 19KHZ
4-FL3	EO-315758	COIL TUN 1 100Z-431 100.00KHZ
4-FL4	EO-337044	COIL TUN 1 102AZ-005
4-L1	EO-355696	COIL FIX 1 LAL04SK 330K
4-L2	EO-337055	COIL VARI 1 FE002S 10MH
4-RL1	EQ-337067	RELAY LEAD LAB2NS 2NO 18V
4-T1	EO-355136	COIL OSC2 94-5014-01 100KHZ
4-FR1,2	ER-328278	⚠ R FUSE ERD2FC 1/4W 10R0G
4-FR3,4	ER-331188	⚠ R FUSE ERD2FC S10 1/4W 8R2J
4-R32	ER-338498	R MF H F10 1/4W 102J
4-R38	ER-355370	R MF H F10 1/4W 4221G
4-R39	ER-356257	R MF H F10 1/4W 5601G
4-R83,84	ER-359160	R MF V CUT 1/4W 3901G
4-R85,86	ER-361094	R MF V CUT 1/4W 5601G
4-R113	ER-356698	R MF H F10 1/4W 2202G
4-R114	ER-355400	R MF H F10 1/4W 1101G
4-R122	ER-338225	R MF H F10 1/4W 331J
4-R125	ER-356250	R MF H F10 1/4W 4700G
4-R126	ER-356252	R MF H F10 1/4W 4701G
4-R127	ER-314586	R MF H 1/4W 5101F
4-R130	ER-314626	R MF H 1/4W 1801F
4-R131	ER-311762	R MF H 1/4W 9101F
4-R132	ER-356251	R MF H F10 1/4W 1002G
4-R135,136	ER-338225	R MF H F10 1/4W 331J
4-R137	ER-360311	R MF H F10 1/4W 3303G
4-R138	ER-307730	R MF H F10 1/4W 7502F
4-R139	ER-318335	R MF H F10 1/4W 8202F
4-R140	ER-314606	R MF H 1/4W 3601F
4-R141	ER-356247	R MF H F10 1/4W 2701G
4-R171	ER-356698	R MF H F10 1/4W 2202G
4-R172	ER-355400	R MF H F10 1/4W 1101G

REF. NO.	PART NO.	DESCRIPTION
4-R202	ER-338498	R MF H F10 1/4W 102J
4-R213	ER-355703	R MF H F10 1/4W 1202G
4-R214	ER-361096	R MF H F10 1/4W 3002G
4-R215	ER-321084	R MF H F10 1/4W 3003F
4-R216	ER-338224	R MF H F10 1/4W 392J
4-R248	ER-356258	R MF H F10 1/4W 4302G
4-R251	ER-356251	R MF H F10 1/4W 1002G
4-R254	ER-311771	R MF H 1/4W 1500F
4-R255	ER-338498	R MF H F10 1/4W 102J
4-R257	ER-355705	R MF H F10 1/4W 1500G
4-R258	ER-338498	R MF H F10 1/4W 102J
4-C5	EC-300193	C EC V F05 NP SM 100M 16DC
4-C38	EC-347228	C MC V F05 FM 470J 500DC
4-C39	EC-316149	C STY V F05 CQ09S 182J 500DC
4-C41,42	EC-316187	C EC V CUT SM 102M 16DC
4-C60	EC-315967	C EC V CUT SM 332M 16.0DC
4-C68	EC-351993	C COMP V AWS 562J 50DC
4-C69	EC-351994	C COMP V AWS 152J 50DC
4-C76	EC-357784	C COMP V AWS 433J 50DC
4-C77	EC-347471	C PP V F05 PP 471J 50DC
4-C80	EC-332052	C EC V F05 NP SM 4R7M 35DC
4-C81	EC-356994	C COMP V AWS 202J 50DC
4-C89	EC-314992	C STY V S05 CQFS 681J 50DC
4-C93,94	EC-200948	C EC V F05 NP SM 1R0M 50DC
4-C109	EC-310440	C STY V S05 CQFS 571J 50DC
4-C119	EC-307494	C STY V F05 CQ09S 331J 50DC
4-C132	EC-334011	C EC V F05 NP SM 101M 6.3DC
4-C136	EC-314996	C STY V S05 CQFS 391J 50DC
4-C148	EC-300193	C EC V F05 NP SM 100M 16DC
4-C162	EC-360693	C MC V F05 FE92 100J 500DC
4-C163	EC-334011	C EC V F05 NP SM 101M 6.3DC
4-C164	EC-347367	C MC V F05 FE92 150J 500DC
4-C166	EC-352008	C COMP V AWS 912J 50DC
4-C167	EC-346879	C PP V F05 PP 221J 50DC
4-C172	EC-351980	C EC V F05 NP SM R33M 50.0DC
4-C173	EC-350680	C COMP V AWS 123J 50DC
4-C175	EC-200948	C EC V F05 NP SM 1R0M 50DC
4-J1A	EJ-347664	PIN J YKC21-5053 P 4P [EXCEPT J]
4-J1B	EJ-361072	PIN J YKC21 P 4P [J]
4-J2	EJ-346076	DIN J TCS4690-01-1111 P 8P
	ASSEMBLY BLOCK	
4-F1A	EF-318608	⚠ FUSE GGS A 250V 1.00A [U,J,C,A]
4-F1B	EF-358974	⚠ FUSE BET T 630MA 250V[B]
4-F1C	EF-601942	⚠ FUSE SEMKO T 630MA 250V [E,V,S]
4-F2A	EF-318608	⚠ FUSE GGS A 250V 1.00A [U,J,C,A]
4-F2B	EF-358974	⚠ FUSE BET T 250V 0.63A [B]
4-F2C	EF-601942	⚠ FUSE SEMKO T 630MA 250V [E,V,S]
4-F3A	EF-318608	⚠ FUSE GGS A 250V 1.00A [U,J,C,A]
4-F3B	EF-359342	⚠ FUSE BET T 400MA 250V[B]
4-F3C	EF-668474	⚠ FUSE SEMKO T 400MA 250V [E,V,S]

5. SYSTEM CONTROL (A) PC BOARD

REF. NO.	PART NO.	DESCRIPTION
5-IC1	EI-355350	IC M50740A-430SP
5-IC2	EI-355602	IC LB1649
5-IC3	EI-337008	IC LC7800
5-IC4	EI-337009	IC LC4049B
5-IC5	EI-337013	IC LB1290
5-IC6	EI-338171	IC LC4069UB
5-IC7	EI-337013	IC LB1290
5-TR1,2	ET-350795	TR 2SC3399
5-TR3,4	ET-308141	TR 2SC2603 G
5-TR5,6	ET-308472	TR 2SA1115 E,F,G
5-TR7,8	ET-350795	TR 2SC3399
5-TR10	ET-350795	TR 2SC3399
5-TR27	ET-349626	TR 2SA1347
5-TR28	ET-310148	TR 2SD612K E,F
5-TR29	ET-308141	TR 2SC2603 G
5-TR30	ET-350795	TR 2SC3399
5-D1	ED-337776	D ZENER H HZ3 C1
5-D2	ED-346458	D ZENER H HZ7FA F10 B1
5-D3	ED-346455	D ZENER H HX7FA F10 A1
5-D4	ED-346607	D ZENER H HZ9 B1
5-D5	ED-306109	D SILICON W03B 100/1.0A
5-D6to9	ED-301911	D SILICON H DS448
5-D11,13	ED-301911	D SILICON H DS448
5-D15,16	ED-301911	D SILICON H DS448
5-D17to19	ED-328486	D ZENER H HZ15 3
5-D43	ED-301911	D SILICON H DS448
5-D48to52	ED-301911	D SILICON H DS448
5-D53	ED-331197	D ZENER H HZ6 C1
5-D54	ED-301911	D SILICON H DS448
5-VR1	EV-522652	R S-FIX V V8K1-1 3P 105
5-X1	EI-349372	OSC CE CSA4.00MG 4MHZ
5-IB1	EH-355320	COMP R M3874
5-IB2	EH-355321	COMP R RKC1/8B13 103J
5-IB4	EH-356520	COMP C EXF-P4 103ZF
5-IB5	EH-355323	COMP C EXF-P6 103ZF
5-C3	EC-316187	C EC V CUT SM 102M 16DC

5A. LOADING PC BOARD

REF. NO.	PART NO.	DESCRIPTION
5A-TR1	ET-349626	TR 2SA1347
5A-TR2	ET-350795	TR 2SC3399
5A-TR3	ET-350795	TR 2SC3399
5A-D2	ED-301911	D SILICON H DS448

6. SYSTEM CONTROL (D) PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-IC301	EI-304657	IC TC4011BP
6-TR301	ET-350795	TR 2SC3399
6-TR302	ET-348950	TR 2SA1345
6-TR303	ET-350795	TR 2SC3399
6-D301to306	ED-301911	D SILICON H DS448

7. METER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
7-IC101	EI-356327	IC HA12067
7-D101	ED-301911	D SILICON H DS448
7-SW101	ES-355332	SW SLIDE SSY02 2-02-02N
7-SW102to110	ES-355604	SW TACT B3F-1020
7-SW111	ES-355332	SW SLIDE SSY02 2-02-02N
7-VR101	EV-355389	VR SLIDE VJ2013-2GPVN 10C B103
7-VR102	EV-355231	VR SLIDE 35P2SVOJ 1Z104
7-IN1	EM-355326	IND FL BG-290Z

8. CONTROL (B) A PC BOARD

REF. NO.	PART NO.	DESCRIPTION
8-R100	ER-306127	R CB H S15 FS RDS 1/2W 681J
8-R101	ER-333668	R CB H S15 FS RDS 1/2W 431J

9. FILTER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
9-L1,2	EO-669273	COIL FIX 2 FL5R200 180

10. HEAD PHONE PC BOARD

REF. NO.	PART NO.	DESCRIPTION
19-J3	EJ-348846	PHONE J 3P HLJ0540 6.3

11. CONTROL (B) B PC BOARD

REF. NO.	PART NO.	DESCRIPTION
11-PH100	ET-345091	PHOTO SENSOR SPI-201-40 B,C

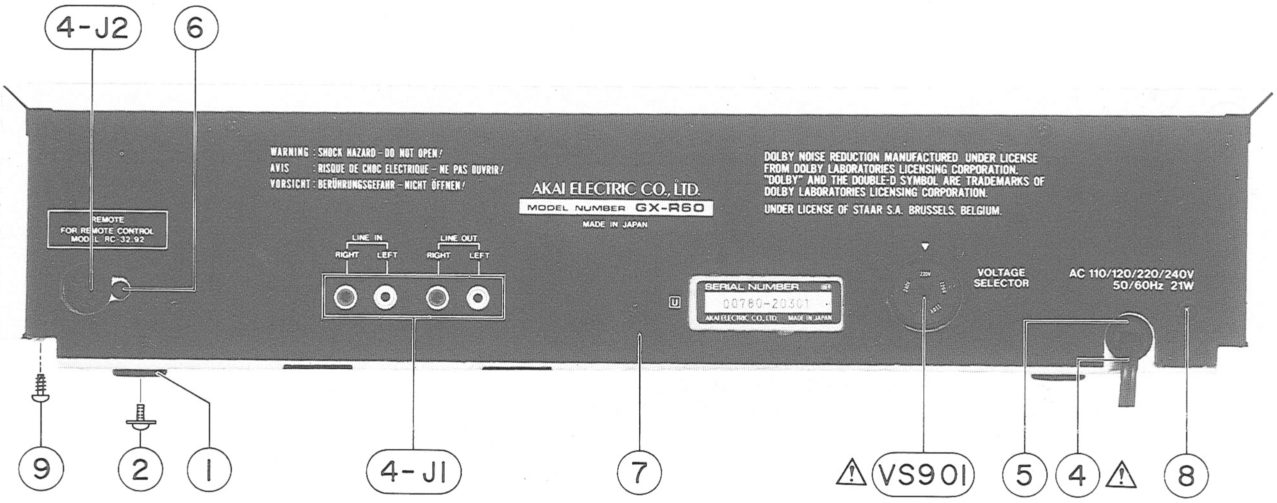
12. POWER SW PC BOARD

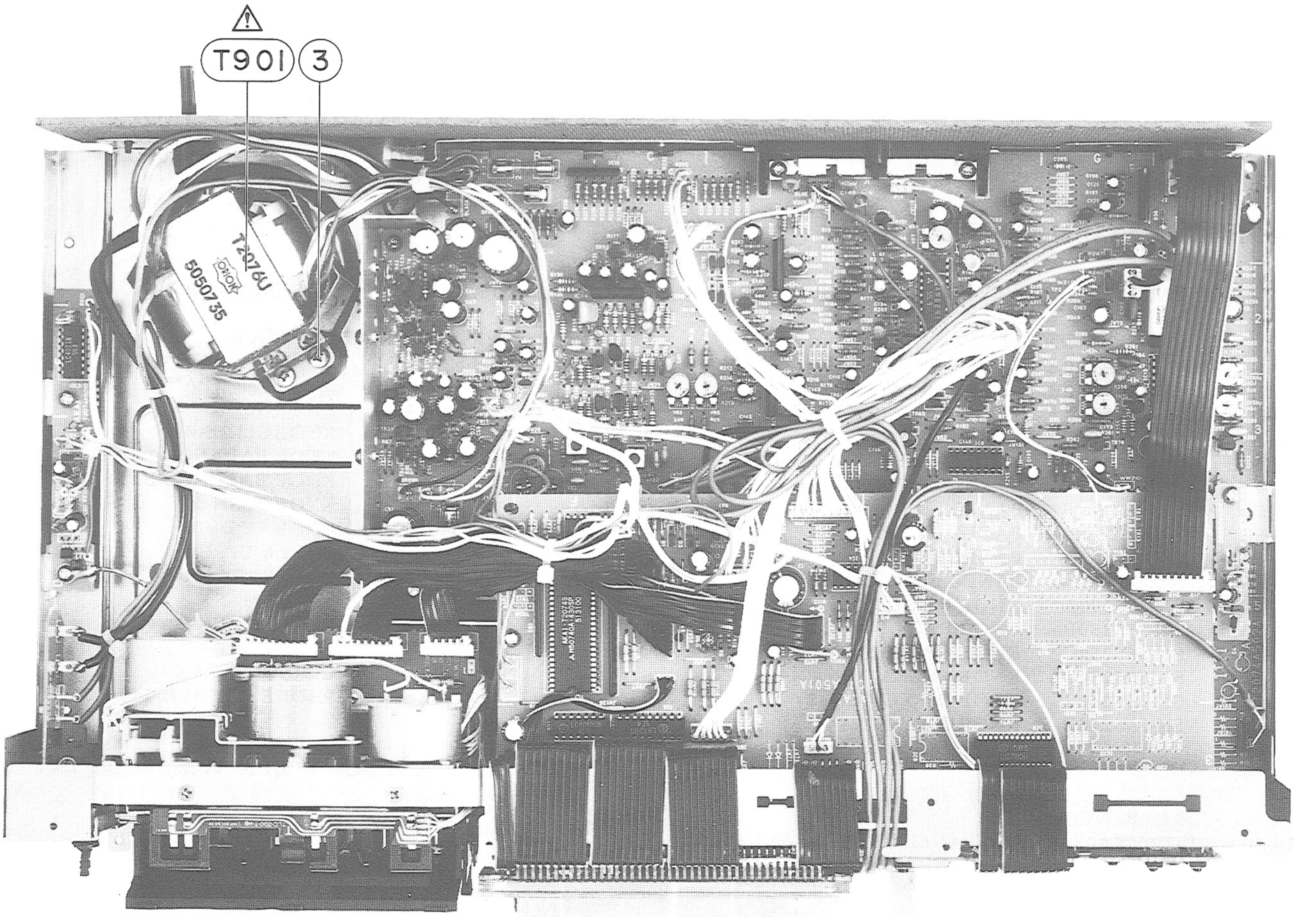
REF. NO.	PART NO.	DESCRIPTION
12-SW2	ES-358581	⚠ SW PUSH J-U3065 01-1
12-C204	EC-355371	⚠ C CE V F 472Z 400AC

13. ASSEMBLY BLOCK

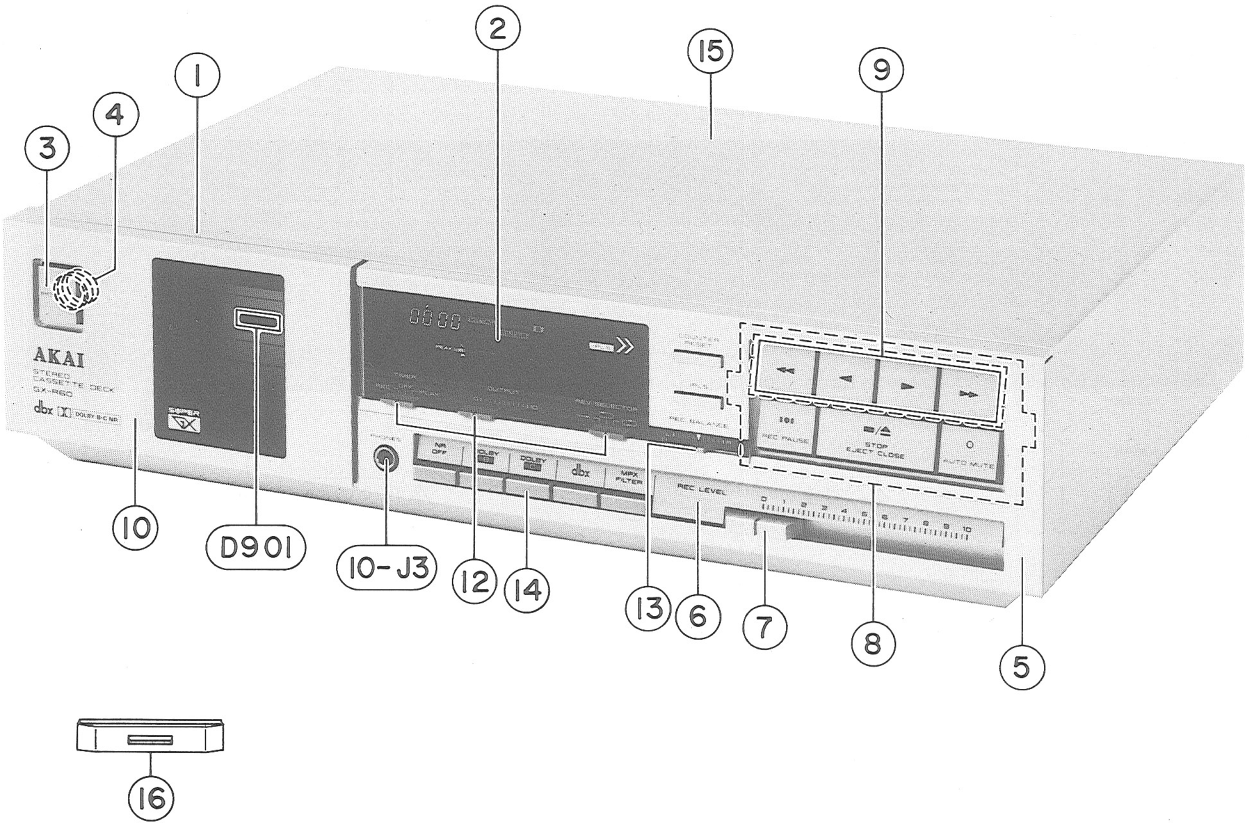
REF. NO.	PART NO.	DESCRIPTION
	ASSEMBLY BLOCK	
13-1	SA-349332	FOOT
13-2	ZS-344754	ST PAN30×06STL CMT C080 [FOOT FIX]
13-3	ZS-304022	ST PAN40×06STL CMT [POWER TRANS FIX]
13-4A	EW-355312	⚠ AC CORD 2 CORES VM-0129A, VFF-CBU/T [U]
13-4B	EW-355521	⚠ AC CORD 2 CORES KP-210 J [J]
13-4C	EW-355318	⚠ AC CORD 2 CORES KP10, SPT2-CB UC [C,A]
13-4D	EW-355315	⚠ AC CORD 2 CORES VM0364, 2×0.75-CB EV [E,V]
13-4E	EW-355316	⚠ AC CORD 2 CORES LC2×0.75-CB [B]
13-4F	EW-355317	⚠ AC CORD 2 CORES VM0436, 2×0.75-CB [S]
13-5	EZ-361283	STRAIN RELIEF SR-5N-5 [J]
13-6	ZW-698308	RV NYL30×055 BL
13-7A	SP-355354A	PANEL REAR BOARD GX-R60 [U]
13-7B	SP-355354B	PANEL REAR BOARD GX-R60 [J]
13-7C	SP-355354C	PANEL REAR BOARD GX-R60[A,C]
13-7D	SP-355354D	PANEL REAR BOARD GX-R60[E,V]
13-7E	SP-355354E	PANEL REAR BOARD GX-R60[B,S]
13-8	ZS-352120	T2BR30×08STL BCM C080
13-9	ZS-455207	T2BR30×05STL CMT [COVER UPPER FIX]
13-10x	AX-603167	CORD RR-163 PIN-PIN/2P
13-T901A	BT-355306	⚠ TRANS POWER T2076(U)
13-T901B	BT-355308	⚠ TRANS POWER T2076(J)
13-T901C	BT-355309	⚠ TRANS POWER T2076(A,C)
13-T901D	BT-355310	⚠ TRANS POWER T2076(E,V)
13-T901E	BT-355311	⚠ TRANS POWER T2076(B,S)
13-VS901	ES-359606	⚠ SW SELECTOR 8T-41S0454 01-4 [U]
	PRE AMP & POWER SUPPLY PC BOARD	
4-J1A	EJ-347664	PIN J YKC21-5053 P 4P [EXCEPT J]
4-J1B	EJ-361072	PIN J YKC21 P 4P [J]
4-J2	EJ-346076	DIN J TCS4690-01-1111 P 8P

ASSEMBLY BLOCK


4-J2
6
WARNING : SHOCK HAZARD - DO NOT OPEN!
AVIS : RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR!
VORSICHT : BERÜHRUNGSGEFAHR - NICHT ÖFFNEN!
AKAI ELECTRIC CO., LTD.
MODEL NUMBER GX-R60
MADE IN JAPAN
DOLBY NOISE REDUCTION MANUFACTURED UNDER LICENSE FROM DOLBY LABORATORIES LICENSING CORPORATION.
"DOLBY" AND THE DOUBLE-D SYMBOL ARE TRADEMARKS OF DOLBY LABORATORIES LICENSING CORPORATION.
UNDER LICENSE OF STAAR S.A. BRUSSELS, BELGIUM.
REMOTE
FOR REMOTE CONTROL
MODEL RC-32/92
LINE IN
RIGHT
LEFT
LINE OUT
RIGHT
LEFT
SERIAL NUMBER
VOLTAGE SELECTOR
AC 110/120/220/240V
50/60Hz 21W
9
2
1
4-J1
7
⚠VS901
5
4
⚠
8


⚠
T901
3
T207U
5050735

FINAL ASSEMBLY BLOCK



14. FINAL ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
	PANEL FRONT BLOCK	
14-1	BD-T2076A020A	PANEL FRONT BLK GX-R60
14-1B	BD-T2076A020B	PANEL FRONT BLK GX-R60-B
14-2	SZ-355243	WINDOW METER
14-3	SK-343017G	KNOB POWER
14-3B	SK-343017F	KNOB POWER-B
14-4	ZG-355238	SP PUSH POWER
14-5	SP-355259	PANEL SUB
14-5B	SP-355259B	PANEL SUB-B
14-6	SP-355255A	PANEL FUNCTION GX-R60
14-6B	SP-355255B	PANEL FUNCTION GX-R60-B
14-7	SK-355250A	KNOB REC LEVEL
14-7B	SK-355250B	KNOB REC LEVEL-B
14-8	SK-355254C	KNOB OPERATION (2)
14-8B	SK-355254D	KNOB OPERATION (2)-B
14-9	SK-355246C	KNOB DIRECTION (2)
14-9B	SK-355246D	KNOB DIRECTION (2)-B
14-D901	ED-344244	D LED SLF601C AMBER [REFLECTOR]
	LID PANEL BLOCK	
14-10	BD-T2074A050B	LID PANEL BLK GX-R60
14-10B	BD-T2074A050D	LID PANEL BLK GX-R60-B

REF. NO.	PART NO.	DESCRIPTION
	FINAL ASSEMBLY BLOCK	
14-11x	ZS-320906	ST BR30×06STL CMT [PANEL FRONT FIX]
14-12	SK-355248A	KNOB SLIDE
14-12B	SK-355248B	KNOB SLIDE-B
14-13	SK-355249A	KNOB BALANCE
14-13B	SK-355249B	KNOB BALANCE-B
14-14	SK-355247A	KNOB PUSH
14-14B	SK-355247B	KNOB PUSH-B
14-15	SP-344591A	COVER UPPER
14-15B	SP-344591D	COVER UPPER-B-(2)
14-16	SE-359322A	PLATE MASK
14-16B	SE-359322B	PLATE MASK-B
	HEAD PHONE PC BOARD	
10-J3	EJ-348846	PHONE J 3P HLJ0540 6.3

NOTE: PANEL FRONT BLK consists of 14-2 to 14-D901.

SYMBOL FOR COLOR VARIATION

NON : STANDARD COLOR
B or BL : BLACK

INDEX

PART NO.	REF. NO.
AX-603167	13-10x
BA-T2074A020B	3-1A
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AKAI

MODEL GX-R60

SCHEMATIC DIAGRAM AND PC BOARDS

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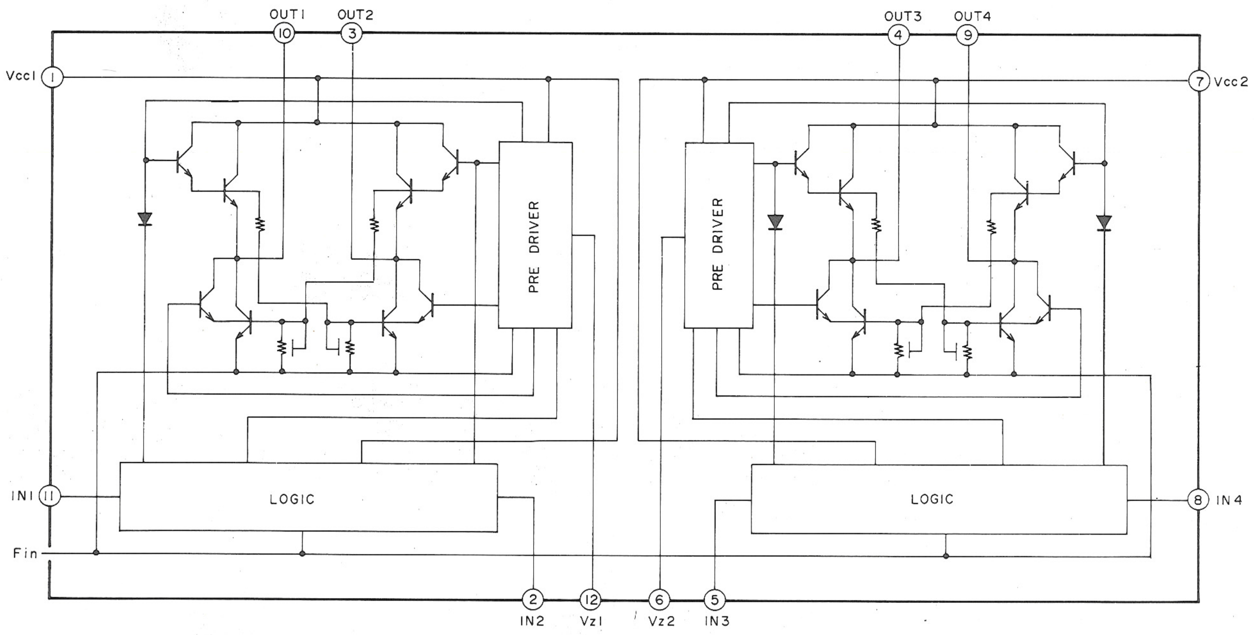
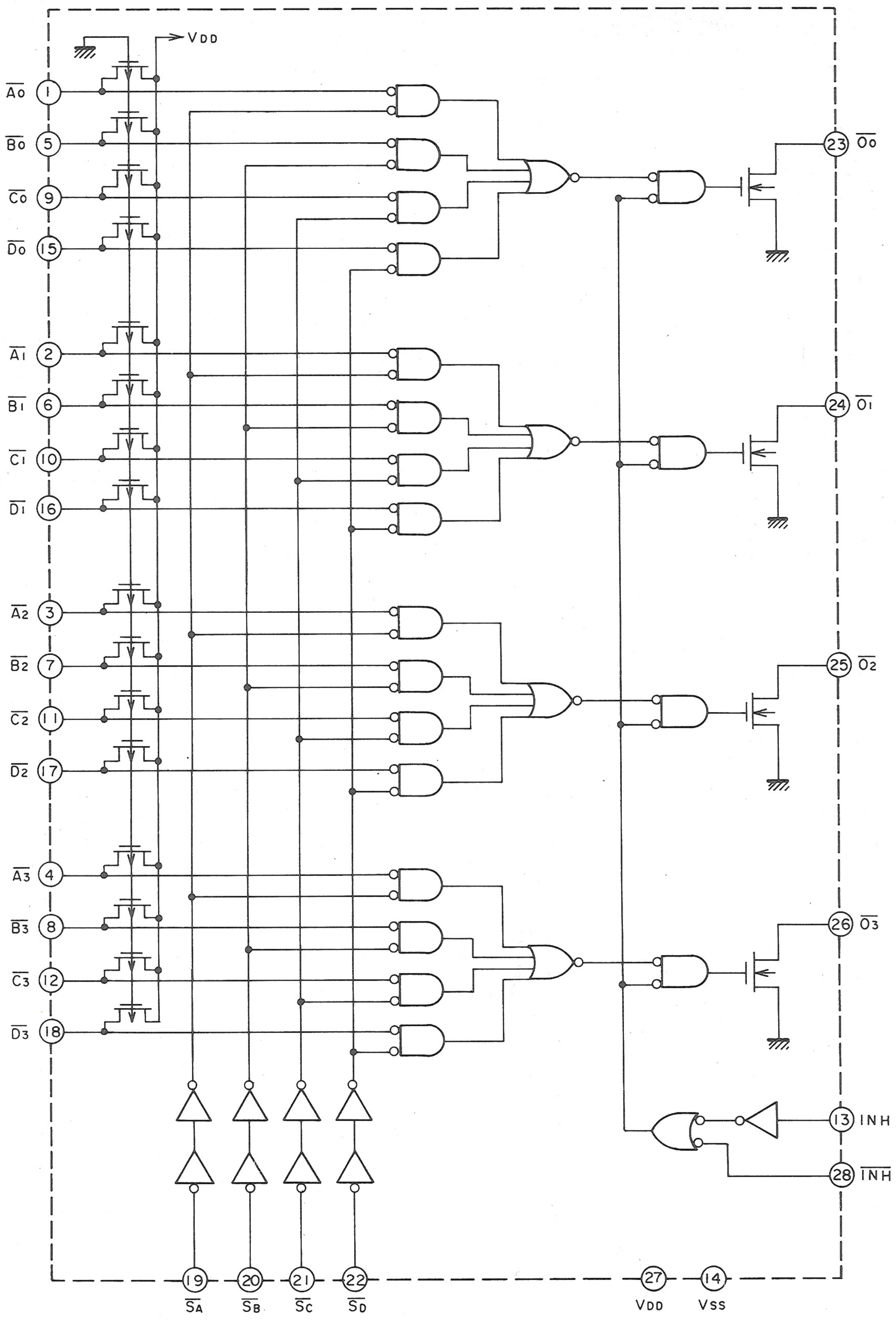
M50740A-430SP

PIN	SYMBOL	DESCRIPTION	
1	$P2_7$	REEL ROTATION SIGNAL from PHOTO SENSOR (L)	
2	$P2_6$	REEL ROTATION SIGNAL from PHOTO SENSOR (R)	
3	$P2_5$	GX-R70 → Connected to +5V GX-R60 → Connected to GND	
4	$P2_4$	Digit Signal Output	
5	$P2_3$		
6	$P2_2$		
7	$P2_1$		
8	$P2_0$		
9	NC	NO Connection	
10	$P0_7$	KEY input	
11	$P0_6$		
12	$P0_5$		
13	$P0_4$		
14	$P0_3$	REC/P.B SELECT SIGNAL OUTPUT	REC → “L” P.B → “H”
15	$P0_2$	P.B MUTE Control SIGNAL OUTPUT	P.B MUTE → “L”
16	$P0_1$	REC MUTE Control SIGNAL OUTPUT	REC MUTE → “L”
17	$P0_0$	BIAS OSC Control SIGNAL OUTPUT	ON → “L” OFF → “H”
18	CNTR	Connect to Ground	
19	INT	Connect to +5V	
20	NC	No Connection	
21	CNVSS	Connect to Ground	
22	RESET	RESET SIGNAL INPUT Terminal	
23	X IN	Terminal for X’tal signal	
24	X OUTF	No Connection	
25	X OUTS	Terminal for X’tal signal	
26	VSS	Connect to ground	
27	R3	DATA input from ROTARY ENCODER	
28	R2		
29	R1		
30	R0		
31	0	Connect to Ground	
32	R/W		
33	CE		
34	RESET OUT		
35	$P1_7$	Output REC PLAY MODE SIGNAL to CRLP Micom (GX-R70 only)	
36	$P1_6$	Output REC PAUSE MODE SIGNAL to CRLP Micom (GX-R70 only)	
37	$P1_5$	CAM MOTOR Forward drive output	
38	$P1_4$	CAM MOTOR Reverse drive output	
39	$P1_3$	REEL MOTOR Forward drive output	
40	$P1_2$	REEL MOTOR Reverse drive output	
41	$P1_1$	REEL MOTOR Drive Control output	
42	$P1_0$		
43	$P3_7$	Music interval signal input (At IPLS MODE)	
44	$P3_6$	7 Segment drive output	
45	$P3_5$		
46	$P3_4$		
47	$P3_3$		
48	$P3_2$		
49	$P3_1$		
50	$P3_0$		
51	NC	No Connect	
52	Vcc	+5V	

LB1649


OUT1
10
OUT2
3
OUT3
4
OUT4
9
Vcc1
1
7
Vcc2
PRE DRIVER
PRE DRIVER
IN1
11
LOGIC
LOGIC
8
IN4
Fin
2
IN2
12
Vz1
6
Vz2
5
IN3

LC7800


VDD
$\overline{A_0}$ 1
$\overline{B_0}$ 5
$\overline{C_0}$ 9
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$\overline{A_1}$ 2
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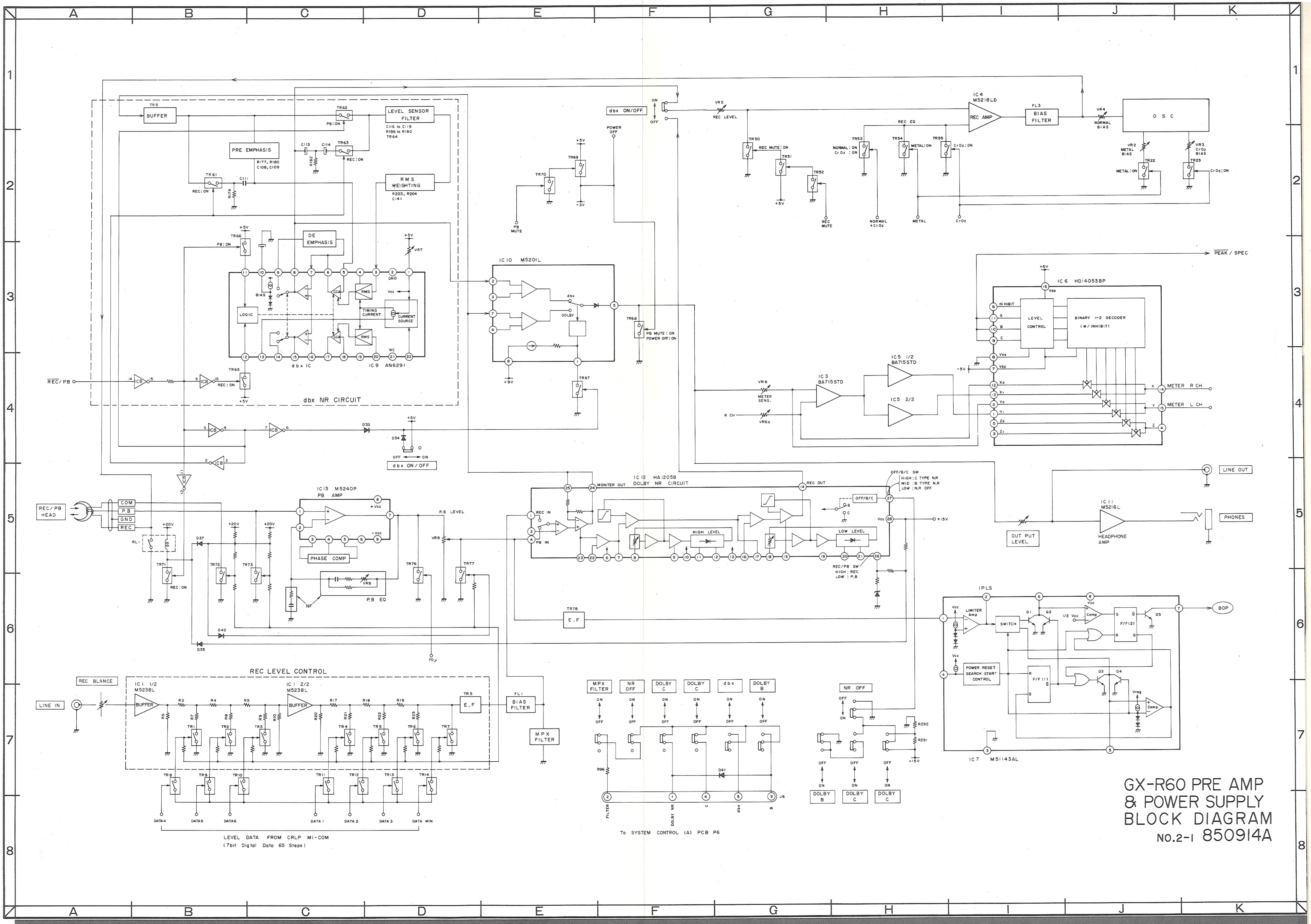
$\overline{C_1}$ 10
$\overline{D_1}$ 16
$\overline{A_2}$ 3
$\overline{B_2}$ 7
$\overline{C_2}$ 11
$\overline{D_2}$ 17
$\overline{A_3}$ 4
$\overline{B_3}$ 8
$\overline{C_3}$ 12
$\overline{D_3}$ 18
23 $\overline{O_0}$
24 $\overline{O_1}$
25 $\overline{O_2}$
26 $\overline{O_3}$
13 INH
28 $\overline{INH}$
19 $\overline{S_A}$
20 $\overline{S_B}$
21 $\overline{S_C}$
22 $\overline{S_D}$
27 VDD
14 VSS


dbx NR CIRCUIT
TR5
BUFFER
TR62
PB: ON
LEVEL SENSOR FILTER
C116 to C119
R186 to R190
TR64
PRE EMPHASIS
R177, R180
C108, C109
C113
C114
TR63
REC: ON
R182
RMS WEIGHTING
R203, R204
C141
TR61
C111
R179
TR66
DE EMPHASIS
+5V
VR7
BIAS
LOGIC
TIMING CURRENT
CURRENT SOURCE
RMS
CCA
Vcc
GND
NC
dbx IC
IC9 AN6291
REC/PB
IC8
TR65
D33
D34
OFF
ON
dbx ON/OFF
REC/PB HEAD
COM
PB
GND
REC
RL1
+20V
D37
TR71
TR72
TR73
IC13 M5240P
PB AMP
PHASE COMP
NF
VR8
P.B EQ
P.B LEVEL
VR9
TR76
TR77
D42
D35
70μ
POWER OFF
TR69
TR70
PB MUTE
-3V
IC10 M5201L
dbx
DOLBY
+9V
TR68
PB MUTE: ON
POWER OFF: ON
TR67
VR5
REC LEVEL
IC4
M5218LD
REC AMP
FL3
BIAS FILTER
VR4
NORMAL BIAS
OSC
REC EQ
TR50
REC MUTE: ON
TR51
TR52
REC MUTE
TR53
NORMAL: ON
CrO2: ON
TR54
METAL: ON
TR55
CrO2: ON
NORMAL +CrO2
METAL
CrO2
VR2
METAL BIAS
TR22
METAL: ON
VR3
CrO2 BIAS
TR23
CrO2: ON
PEAK/SPEC
IC6 HD14053BP
INHIBIT
LEVEL CONTROL
BINARY 1-2 DECODER (W/INHIBIT)
Vss
Vee
Vdd
IC5 1/2 BA715STD
IC3 BA715STD
IC5 2/2
VR6
METER SENS.
R CH
VR6b
METER R CH
METER L CH
IC12 HA12058
DOLBY NR CIRCUIT
MONITER OUT
REC OUT
REC IN
PB IN
HIGH LEVEL
LOW LEVEL
OFF/B/C
OFF/B/C SW
HIGH: C TYPE N.R
MID: B TYPE N.R
LOW: N.R OFF
+15V
REC/PB SW
HIGH: REC
LOW: P.B
LINE OUT
OUT PUT LEVEL
IC11
M5216L
HEADPHONE AMP
PHONES
TR78
E.F
IPLS
LIMITER Amp
SWITCH
Q1
Q2
1/2 Vcc
Comp
F/F(2)
Q5
BOP
POWER RESET SEARCH START CONTROL
F/F(1)
Q3
Q4
Vreg
IC7 M51143AL
REC LEVEL CONTROL
REC BLANCE
LINE IN
IC1 1/2
M5238L
IC1 2/2
M5238L
R3
R4
R5
R9
R10
R6
R7
R8
R17
R18
R19
R20
R21
R22
R23
TR1
TR2
TR3
TR4
TR5
TR6
TR7
FL1
BIAS FILTER
MPX FILTER
TR8
TR9
TR10
TR11
TR12
TR13
TR14
DATA4
DATA5
DATA6
DATA1
DATA2
DATA3
DATA MIN
LEVEL DATA FROM CRLP MI-COM
(7bit Digital Data 65 Steps)
MPX FILTER
NR OFF
DOLBY C
DOLBY C
dbx
DOLBY B
R96
D41
J6
FILTER
DOLBY NR
C
dbx
B
To SYSTEM CONTROL (A) PCB P6
NR OFF
R292
R291
DOLBY B
DOLBY C
DOLBY C
A
B
C
D
E
F
G
H
I
J
K
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7
8

GX-R60 PRE AMP & POWER SUPPLY BLOCK DIAGRAM

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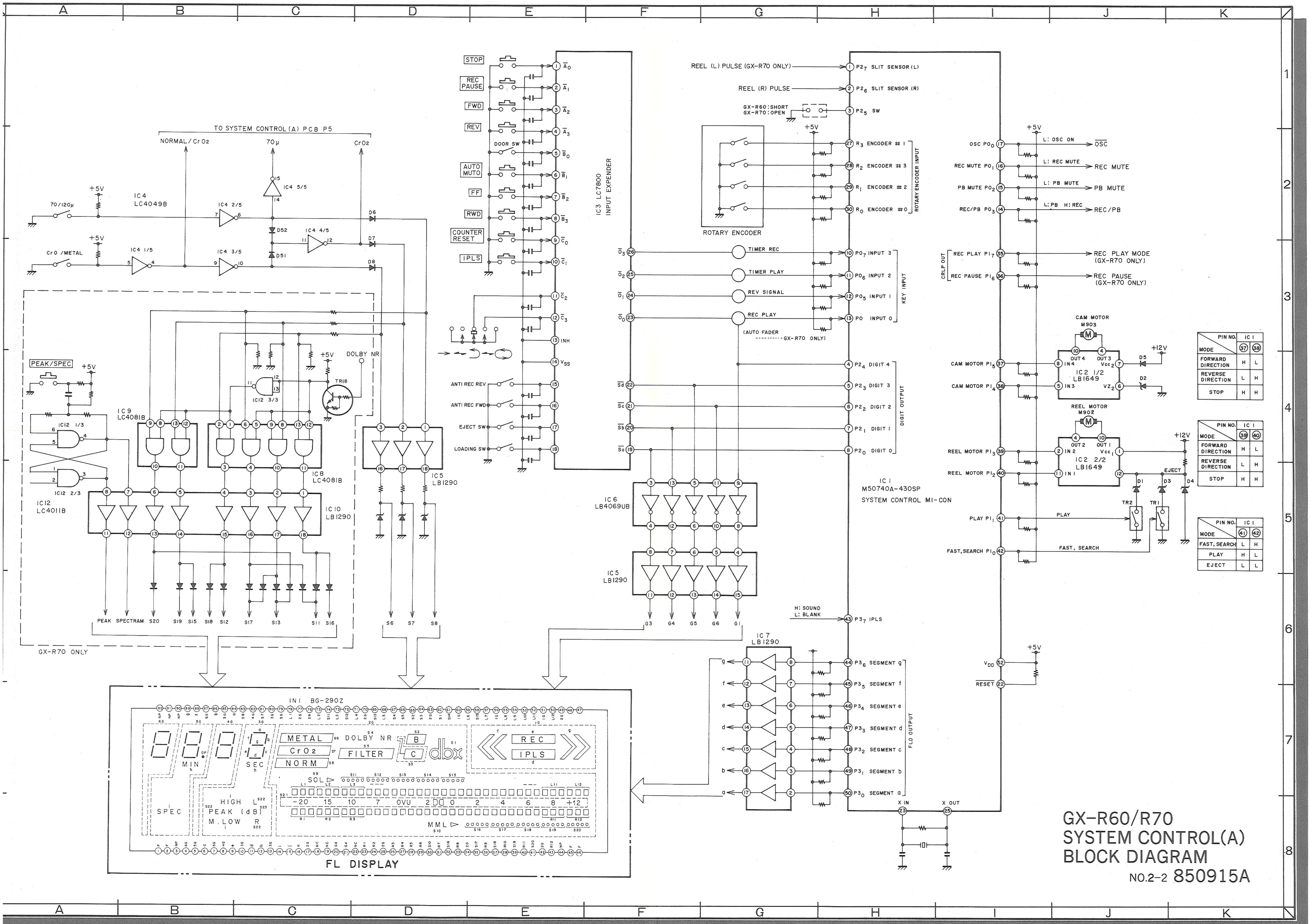
A
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C
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2
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4
5
6
7
8
TO SYSTEM CONTROL (A) PCB P5
NORMAL / CrO2
70μ
CrO2
+5V
IC4 LC4049B
70/120μ
CrO /METAL
IC4 1/5
IC4 2/5
IC4 3/5
IC4 4/5
IC4 5/5
D6
D7
D8
D51
D52
PEAK/SPEC
DOLBY NR
TR18
IC12 1/3
IC12 2/3
IC12 LC4011B
IC12 3/3
IC9 LC4081B
IC8 LC4081B
IC10 LB1290
IC5 LB1290
PEAK SPECTRAM S20 S19 S15 S18 S12 S17 S13 S11 S16
S6 S7 S8
GX-R70 ONLY
STOP
REC PAUSE
FWD
REV
DOOR SW
AUTO MUTO
FF
RWD
COUNTER RESET
IPLS
ANTI REC REV
ANTI REC FWD
EJECT SW
LOADING SW
IC3 LC7800 INPUT EXPENDER
INH
VSS
REEL (L) PULSE (GX-R70 ONLY)
REEL (R) PULSE
GX-R60 : SHORT
GX-R70 : OPEN
ROTARY ENCODER
P27 SLIT SENSOR (L)
P26 SLIT SENSOR (R)
P25 SW
R3 ENCODER #1
R2 ENCODER #3
R1 ENCODER #2
R0 ENCODER #0
ROTARY ENCODER INPUT
TIMER REC
TIMER PLAY
REV SIGNAL
REC PLAY
(AUTO FADER ---------GX-R70 ONLY)
PO7 INPUT 3
PO6 INPUT 2
PO5 INPUT 1
PO INPUT 0
KEY INPUT
P24 DIGIT 4
P23 DIGIT 3
P22 DIGIT 2
P21 DIGIT 1
P20 DIGIT 0
DIGIT OUTPUT
IC6 LB4069UB
IC5 LB1290
G3 G4 G5 G6 G1
H: SOUND
L: BLANK
P37 IPLS
IC7 LB1290
P36 SEGMENT g
P35 SEGMENT f
P34 SEGMENT e
P33 SEGMENT d
P32 SEGMENT c
P31 SEGMENT b
P30 SEGMENT a
FLD OUTPUT
X IN
X OUT
IC1 M50740A-430SP SYSTEM CONTROL MI-CON
OSC PO0
REC MUTE PO1
PB MUTE PO2
REC/PB PO3
L: OSC ON → OSC
L: REC MUTE → REC MUTE
L: PB MUTE → PB MUTE
L: PB H: REC → REC/PB
CRLP OUT
REC PLAY PI7 → REC PLAY MODE (GX-R70 ONLY)
REC PAUSE PI6 → REC PAUSE (GX-R70 ONLY)
CAM MOTOR M903
CAM MOTOR PI5
CAM MOTOR PI4
IC2 1/2 LB1649
+12V
D5
D2
REEL MOTOR M902
REEL MOTOR PI3
REEL MOTOR PI2
IC2 2/2 LB1649
EJECT
D1 D3 D4
TR2 TR1
PLAY PI1
FAST, SEARCH PI0
PLAY
FAST, SEARCH
VDD
RESET
INI BG-290Z
METAL
CrO2
NORM
DOLBY NR
FILTER
B
C
dbx
REC
IPLS
MIN
SEC
SPEC
HIGH
PEAK (dB)
M.LOW
L
R
SOL
MML
-20 15 10 7 0VU 2 0 2 4 6 8 +12
FL DISPLAY

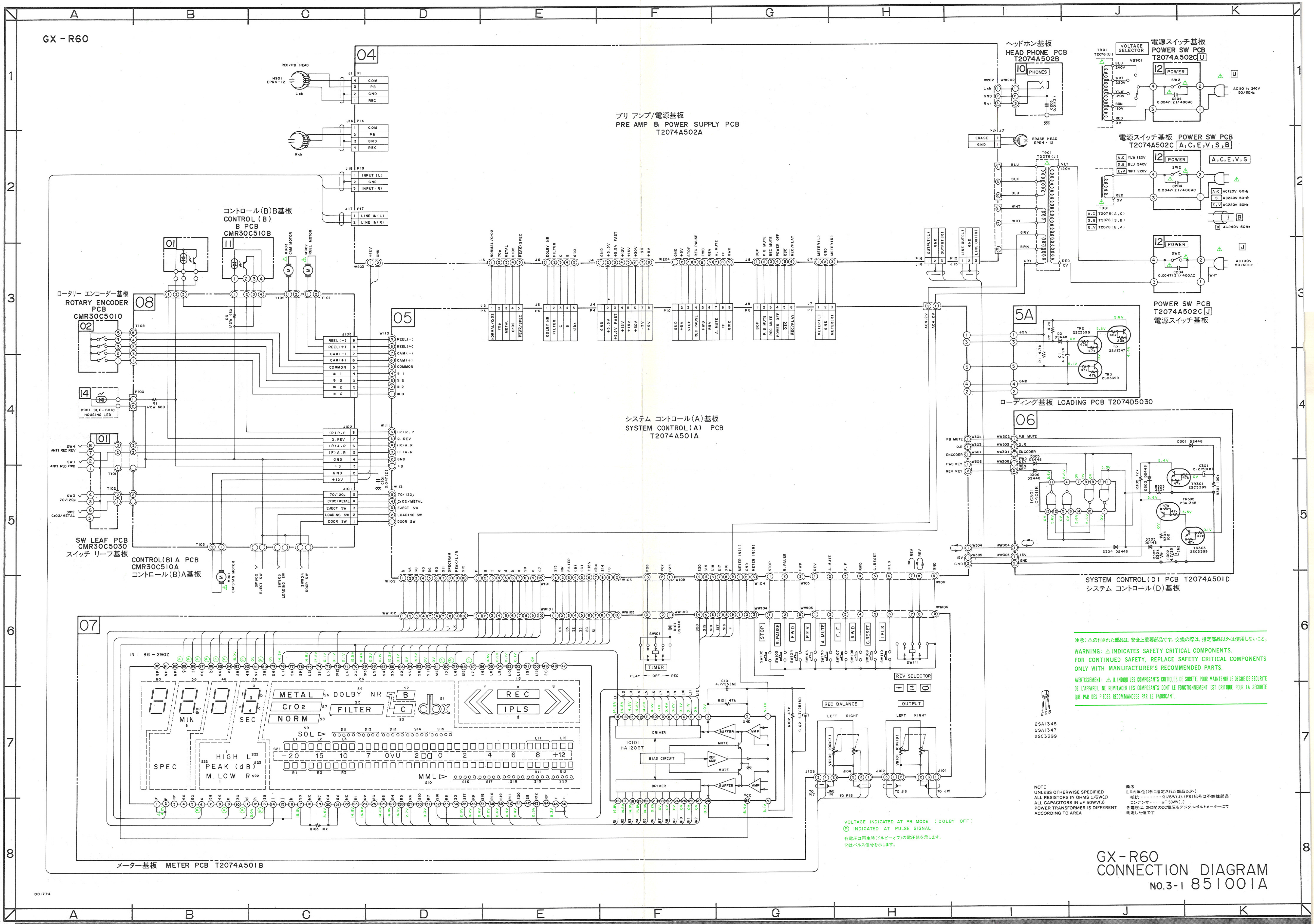
PIN NO. / MODE	IC 1 ㊲	IC 1 ㊳
FORWARD DIRECTION	H	L
REVERSE DIRECTION	L	H
STOP	H	H

PIN NO. / MODE	IC 1 ㊴	IC 1 ㊵
FORWARD DIRECTION	H	L
REVERSE DIRECTION	L	H
STOP	H	H

PIN NO. / MODE	IC 1 ㊶	IC 1 ㊷
FAST, SEARCH	L	H
PLAY	H	L
EJECT	L	L

GX-R60/R70 SYSTEM CONTROL(A) BLOCK DIAGRAM

NO.2-2 850915A


GX-R60
04
プリ アンプ/電源基板
PRE AMP & POWER SUPPLY PCB
T2074A502A
REC/PB HEAD
H901
EPR4-12
Lch
Rch
COM
PB
GND
REC
INPUT (L)
INPUT (R)
LINE IN (L)
LINE IN (R)
ヘッドホン基板
HEAD PHONE PCB
T2074A502B
10
PHONES
ERASE
ERASE HEAD
EPR4-12
VOLTAGE SELECTOR
電源スイッチ基板
POWER SW PCB
T2074A502C U
12
POWER
AC110 to 240V 50/60Hz
電源スイッチ基板 POWER SW PCB
T2074A502C A,C,E,V,S,B
AC120V 60Hz
AC240V 50Hz
AC220V 50Hz
AC240V 50Hz
AC100V 50/60Hz
POWER SW PCB
T2074A502C J
電源スイッチ基板
コントロール(B)B基板
CONTROL (B)
B PCB
CMR30C5010B
01
11
M902 CAM MOTOR
M901 REEL MOTOR
ロータリー エンコーダー基板
ROTARY ENCODER PCB
CMR30C5010
08
02
14
D901 SLF-601C HOUSING LED
101
SW4 ANTI REC REV
SW1 ANTI REC FWD
SW3 70/120μ
SW2 CrO2/METAL
SW LEAF PCB
CMR30C5030
スイッチ リーフ基板
CONTROL(B) A PCB
CMR30C510A
コントロール(B)A基板
M903 CAPSTAN MOTOR
SW902 EJECT SW
SW903 LOADING SW
SW904 DOOR SW
05
システム コントロール(A)基板
SYSTEM CONTROL(A) PCB
T2074A501A
REEL(-)
REEL(+)
CAM(-)
CAM(+)
COMMON
(R)R.P
Q.REV
(R)A.R
(F)A.R
70/120μ
CrO2/METAL
EJECT SW
LOADING SW
DOOR SW
5A
ローディング基板 LOADING PCB T2074D5030
06
PB MUTE
Q.R
ENCODER
FWD KEY
REV KEY
IC301 LC4011B
SYSTEM CONTROL(D) PCB T2074A501D
システム コントロール(D)基板
07
IN1 BG-290Z
METAL
CrO2
NORM
DOLBY NR
FILTER
REC
IPLS
MIN
SEC
SPEC
HIGH
PEAK (dB)
M.LOW
SOL
MML
-20 15 10 7 0VU 2 0 2 4 6 8 +12
IC101 HA12067
DRIVER
BUFFER
AMP
MUTE
BIAS CIRCUIT
REF AMP
TIMER
PLAY — OFF — REC
STOP
R.PAUSE
FWD
REV
A.MUTE
F.F
RWD
C.RESET
IPLS
REV SELECTOR
REC BALANCE
OUTPUT
LEFT
RIGHT
VR102 100k(Z)
VR101 100k(B)
TO P17
LINE IN
TO P18
TO J16
TO J15
メーター基板 METER PCB T2074A501B
001774

注意: ⚠の付された部品は、安全上重要部品です。交換の際は、指定部品以外は使用しないこと。

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS.
FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

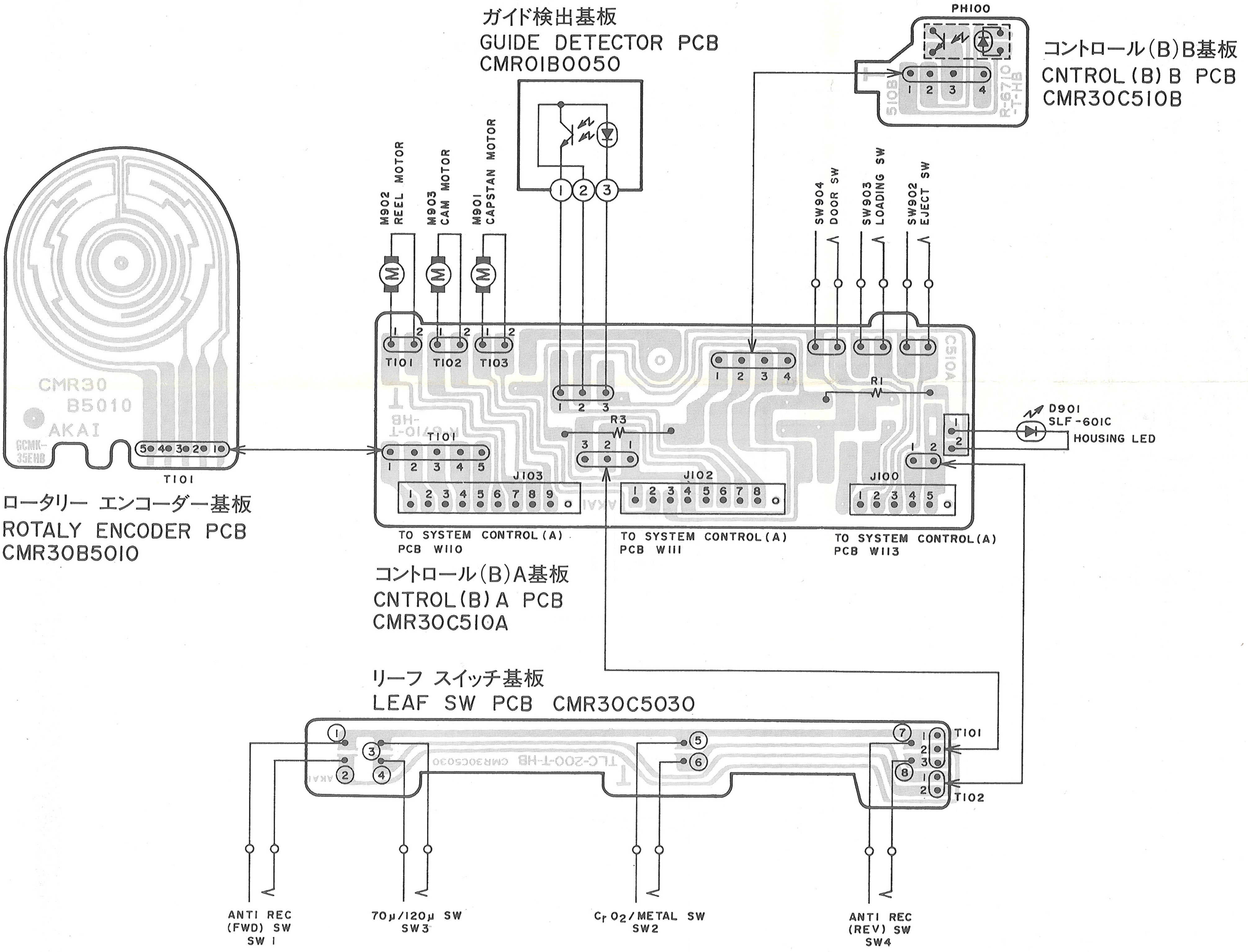
2SA1345
2SA1347
2SC3399

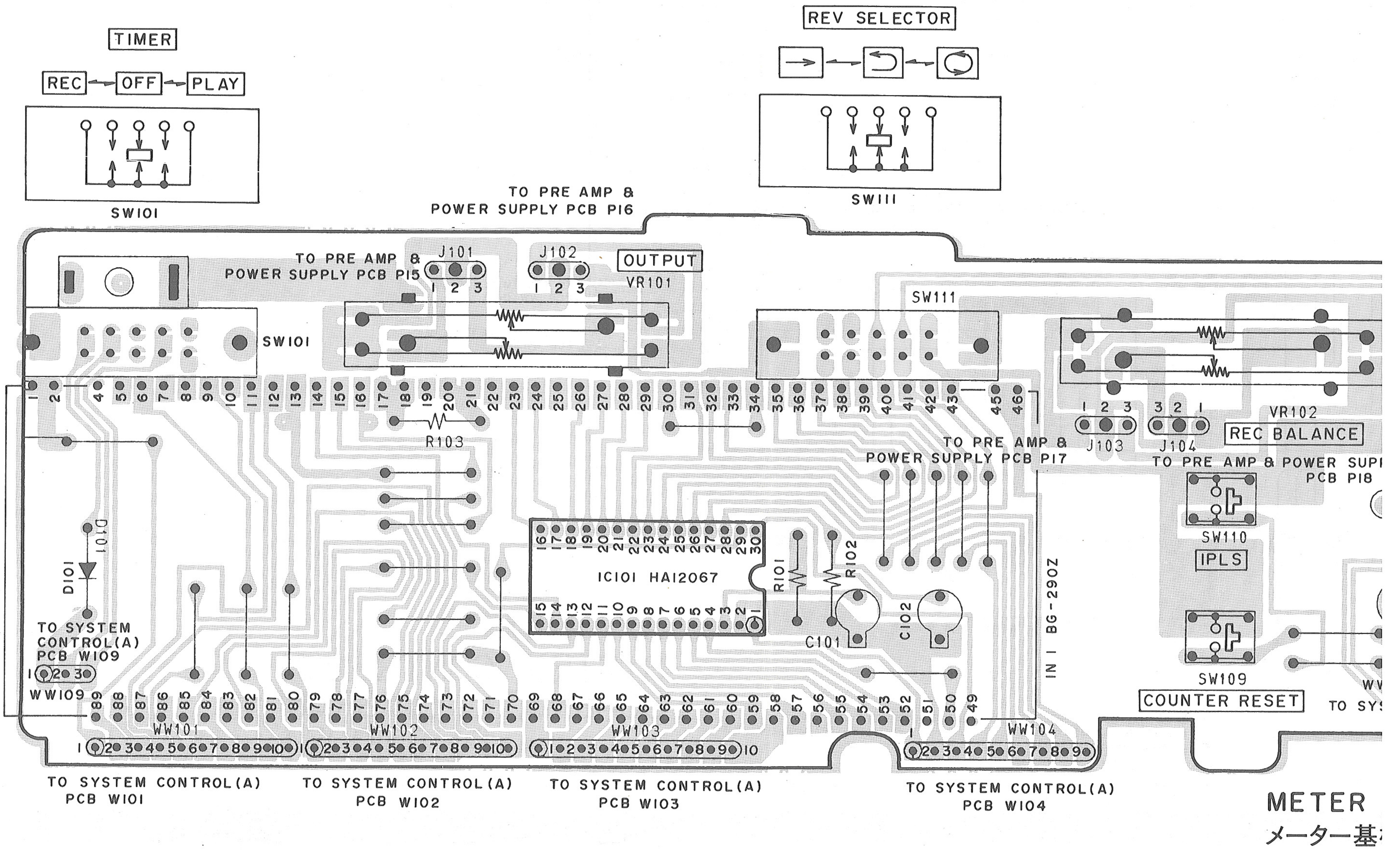
VOLTAGE INDICATED AT PB MODE (DOLBY OFF)
Ⓟ INDICATED AT PULSE SIGNAL
各電圧は再生時(ドルビーオフ)の電圧値を示します。
Ⓟはパルス信号を示します。

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

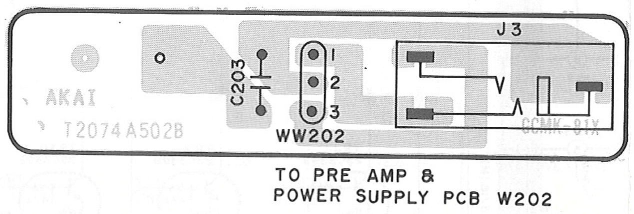
備考
C.Rの単位(特に指定された部品以外)
抵抗……………Ω1/6W(J).(FS)記号は不燃性部品
コンデンサ………μF 50WV(J)
各電圧は、GND間のDC電圧をデジタルボルトメーターにて測定した値です

GX-R60
CONNECTION DIAGRAM
NO.3-1 851001A

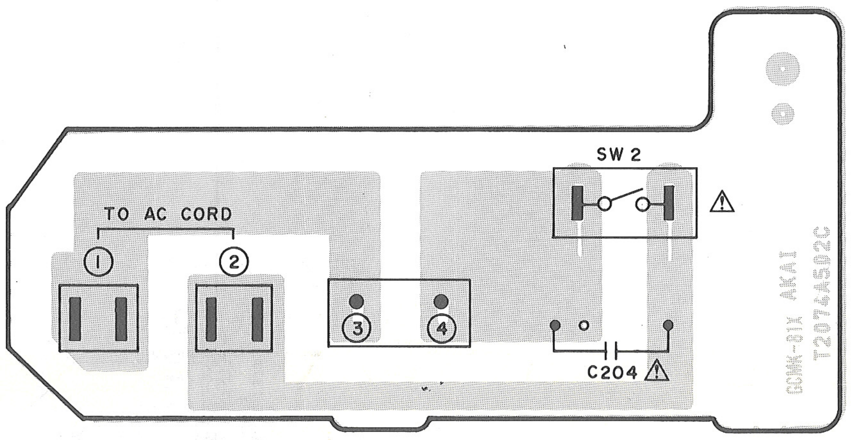

ガイド検出基板
GUIDE DETECTOR PCB
CMR01B0050
コントロール(B)B基板
CNTROL(B) B PCB
CMR30C510B
PH100
M902 REEL MOTOR
M903 CAM MOTOR
M901 CAPSTAN MOTOR
SW904 DOOR SW
SW903 LOADING SW
SW902 EJECT SW
T101
T102
T103
R1
R3
C510A
D901 SLF-601C
HOUSING LED
J100
J102
J103
CMR30 B5010 AKAI
ロータリー エンコーダー基板
ROTALY ENCODER PCB
CMR30B5010
TO SYSTEM CONTROL(A) PCB W110
TO SYSTEM CONTROL(A) PCB W111
TO SYSTEM CONTROL(A) PCB W113
コントロール(B)A基板
CNTROL(B) A PCB
CMR30C510A
リーフ スイッチ基板
LEAF SW PCB CMR30C5030
TLC-200-T-HB
ANTI REC (FWD) SW SW1
70μ/120μ SW SW3
Cr O2/METAL SW SW2
ANTI REC (REV) SW SW4


TIMER
REC
OFF
PLAY
SW101
REV SELECTOR
SW111
TO PRE AMP & POWER SUPPLY PCB P16
TO PRE AMP & POWER SUPPLY PCB P15
J101
J102
OUTPUT
VR101
R103
IC101 HA12067
R101
R102
C101
C102
D101
TO SYSTEM CONTROL(A) PCB W109
WW109
WW101
WW102
WW103
WW104
IN 1 BG-290Z
TO PRE AMP & POWER SUPPLY PCB P17
J103
J104
VR102
REC BALANCE
TO PRE AMP & POWER SUPPLY PCB P18
SW110
IPLS
SW109
COUNTER RESET
TO SYSTEM CONTROL(A) PCB W101
TO SYSTEM CONTROL(A) PCB W102
TO SYSTEM CONTROL(A) PCB W103
TO SYSTEM CONTROL(A) PCB W104
METER
メーター基

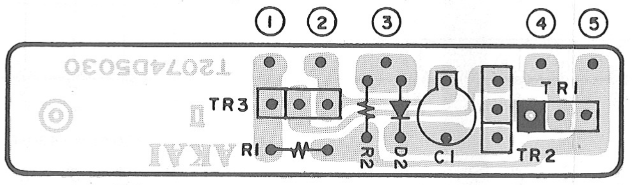
)B基板
B PCB
B


J3
C203
1
2
3
WW202
AKAI
T2074A502B
GCMK-81X
TO PRE AMP &
POWER SUPPLY PCB W202

ヘッドホン基板
HEAD PHONE PCB
T2074A502B


SW 2
⚠
TO AC CORD
①
②
③
④
C204 ⚠
GCMK-81X AKAI
T2074A502C

POWER SW PCB T2074A502C
電源スイッチ基板


①
②
③
④
⑤
T2074D5030
TR3
TR1
R1
R2
D2
C1
TR2
AKAI

TR1----2SA1347
TR2,3 --2SC3399

LOADING PCB T2074D5030
ローディング基板

注意：⚠の付された部品は、安全上重要部品です。交換の際は、指定部品以外は使用しないこと。

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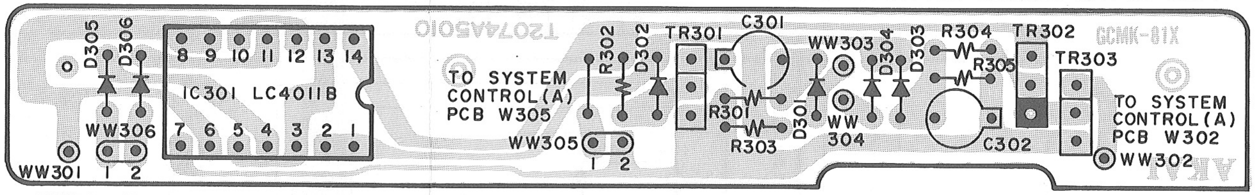
FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

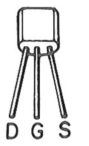
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

WW303 : TO SYSTEM CONTROL (B) PCB W303
WW304 : TO SYSTEM CONTROL (A) PCB W304


D305
D306
8 9 10 11 12 13 14
IC301 LC4011B
7 6 5 4 3 2 1
WW306
1 2
WW301
T2074A5010
TO SYSTEM CONTROL (A) PCB W305
R302
D302
TR301
C301
R301
R303
D301
WW303
WW 304
WW305
1 2
D304
D303
R304
R305
TR302
TR303
GCMK-81X
C302
TO SYSTEM CONTROL (A) PCB W302
WW302
AKAI

WW301 : TO SYSTEM CONTROL (A) PCB W301
WW306 : TO SYSTEM CONTROL (A) PCB W306

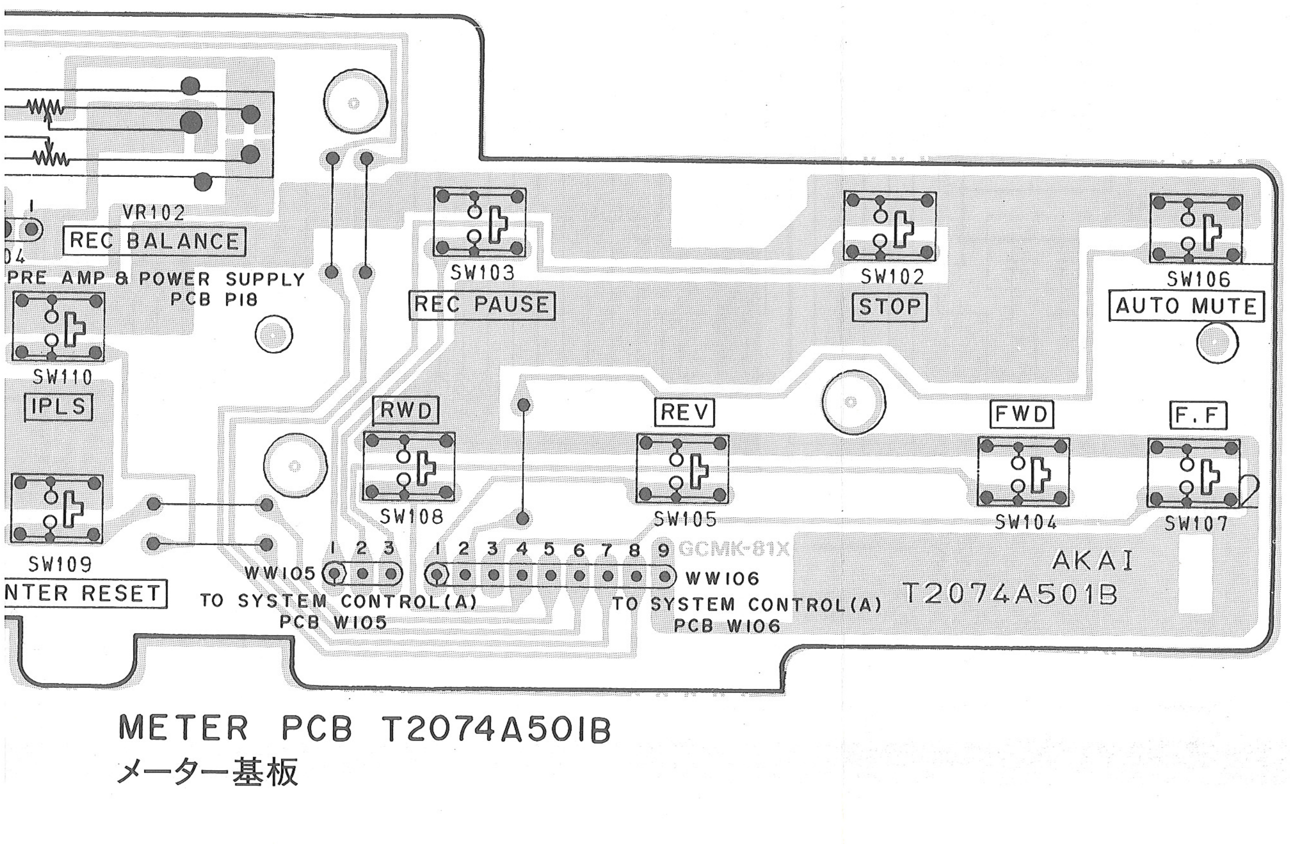
SYSTEM CONTROL (D) PCB T2074A5010
システム コントロール(D)基板



2SA1345
2SC3399

TR301,303 --- 2SC3399
TR302 ------- 2SA1345

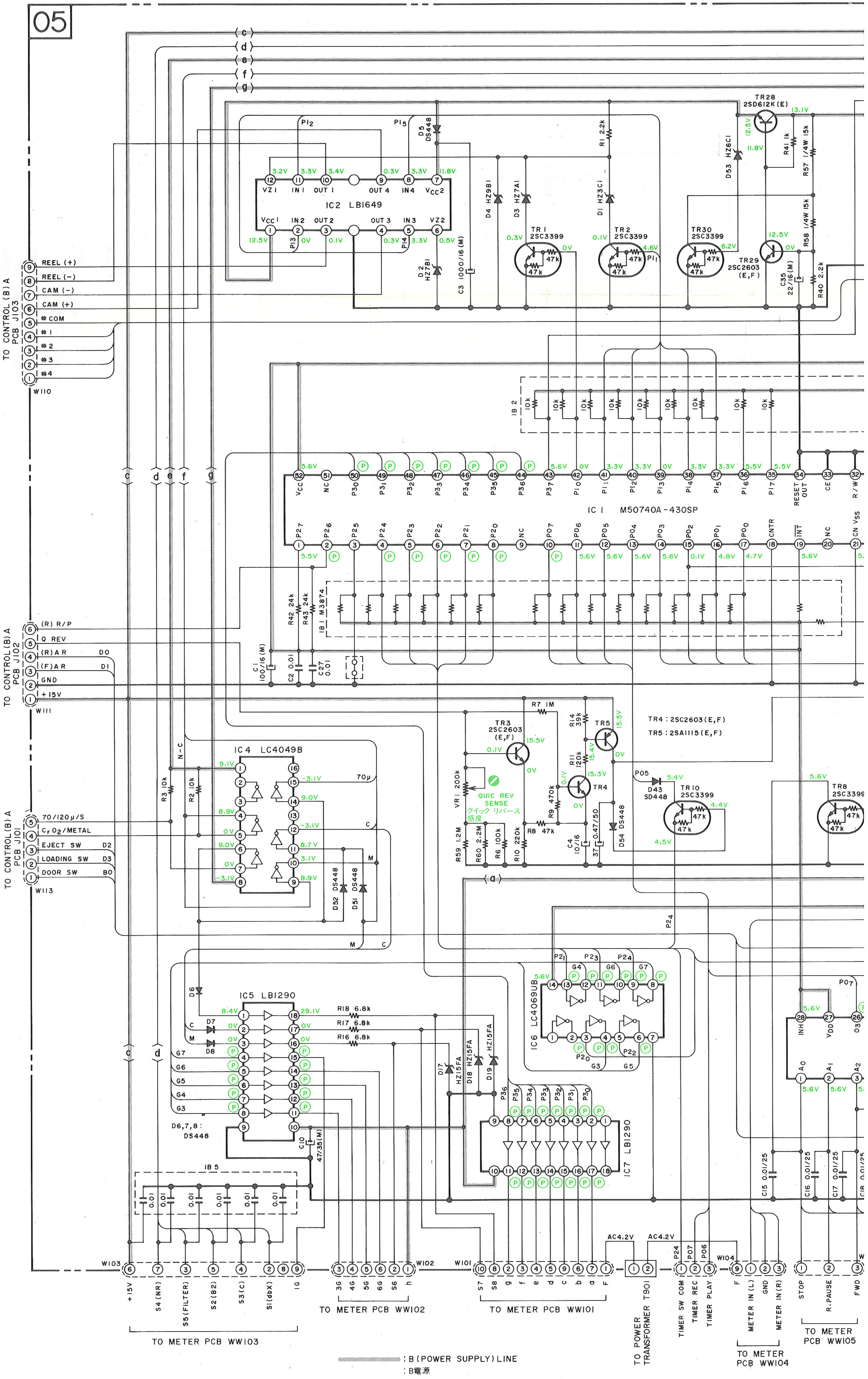
B
○●● = NPN TRANSISTOR
B
■●● = PNP TRANSISTOR


VR102
REC BALANCE
PRE AMP & POWER SUPPLY PCB P18
SW110
IPLS
SW109
NTER RESET
SW103
REC PAUSE
SW102
STOP
SW106
AUTO MUTE
RWD
SW108
REV
SW105
FWD
SW104
F.F
SW107
1 2 3
WW105
TO SYSTEM CONTROL (A) PCB W105
1 2 3 4 5 6 7 8 9
WW106
TO SYSTEM CONTROL (A) PCB W106
GCMK-81X
AKAI
T2074A501B

METER PCB T2074A501B
メーター基板

GX-R60

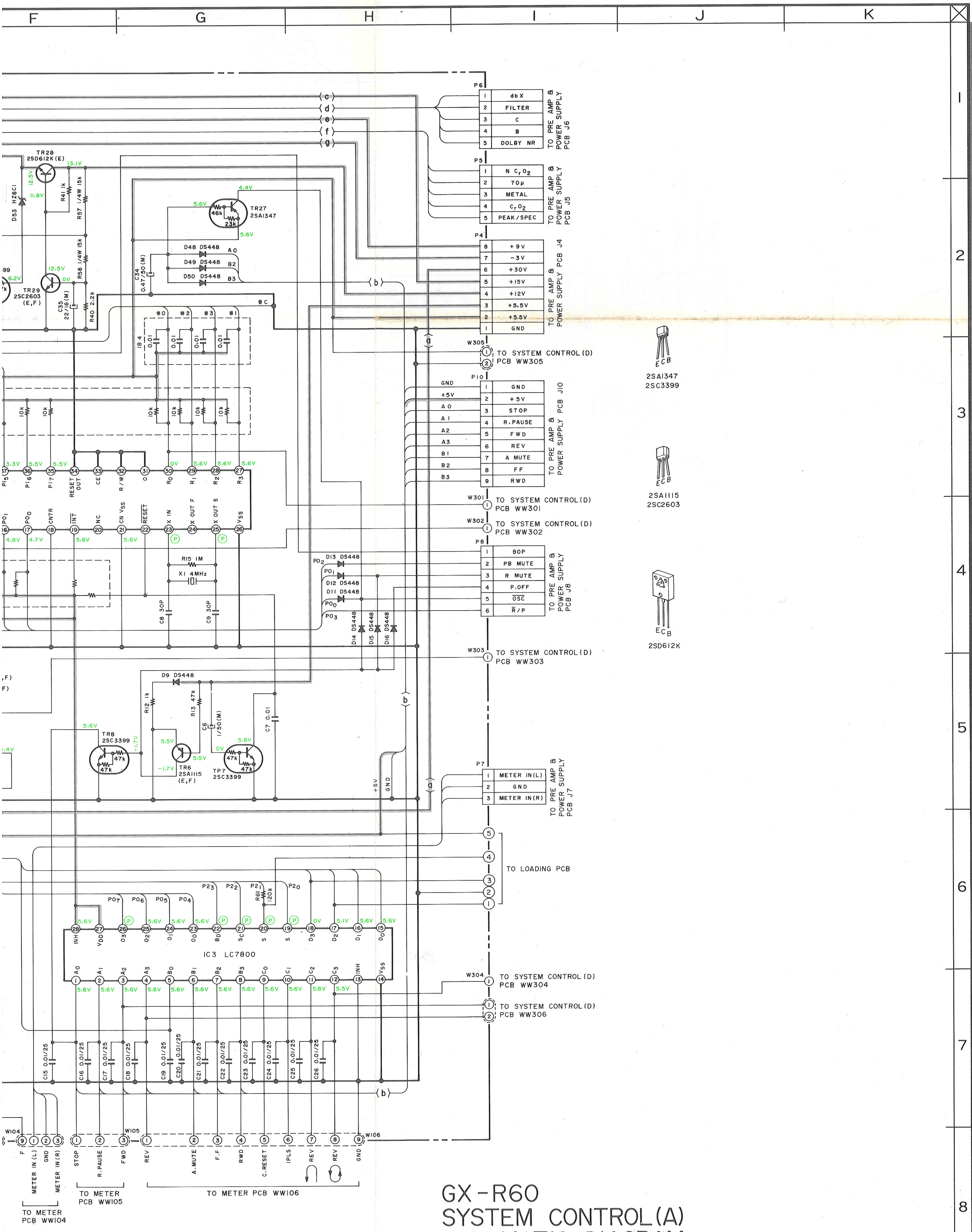
システム コントロール（A）基板
SYSTEM CONTROL(A) PCB T2074A501A


05
IC2 LB1649
IC1 M50740A-430SP
IC4 LC4049B
IC5 LB1290
IC6 LC4069UB
IC7 LB1290
IB 1 M3874
IB 2
IB 5
TR1 2SC3399
TR2 2SC3399
TR3 2SC2603 (E,F)
TR4 : 2SC2603(E,F)
TR5 : 2SA1115(E,F)
TR8 2SC3399
TR10 2SC3399
TR28 2SD612K(E)
TR29 2SC2603 (E,F)
TR30 2SC3399
D5 DS448
D53 HZ6C1
D4 HZ9B1
D3 HZ7A1
D1 HZ3C1
D2 HZ7B1
D43 SD448
D54 DS448
D52 DS448
D51 DS448
D6,7,8: DS448
D17 HZ15FA
D18 HZ15FA
D19 HZ15FA
VR1 200k
QUIC REV SENSE
クイック リバース 感度
TO CONTROL (B) A PCB J103
REEL (+)
REEL (−)
CAM (−)
CAM (+)
# COM
# 1
# 2
# 3
# 4
W110
TO CONTROL (B) A PCB J102
(R) R/P
Q REV
(R) A R
(F) A R
GND
+15V
W111
TO CONTROL (B) A PCB J101
70/120μ/S
CrO2/METAL
EJECT SW
LOADING SW
DOOR SW
W113
W103
+15V
S4 (NR)
S5 (FILTER)
S2 (B2)
S3 (C)
S1 (dbX)
IG
TO METER PCB WW103
W102
3G 4G 5G 6G S6 h
TO METER PCB WW102
W101
S7 S8 g f e d c b a F
TO METER PCB WW101
AC4.2V
AC4.2V
TO POWER TRANSFORMER T901
W104
TIMER SW COM
TIMER REC
TIMER PLAY
METER IN (L)
GND
METER IN (R)
TO METER PCB WW104
STOP
R.PAUSE
FWD
TO METER PCB WW105

▬ : B (POWER SUPPLY) LINE
: B電源

VOLTAGE INDICATED AT P.B MODE (DOLBY OFF)
Ⓟ INDICATED AT PULSE SIGNAL
各電圧は再生時（ドルビーオフ）の電圧値を示します。
Ⓟはパルス信号を示します。

NOTE
UNLESS
ALL RESI
ALL CAP



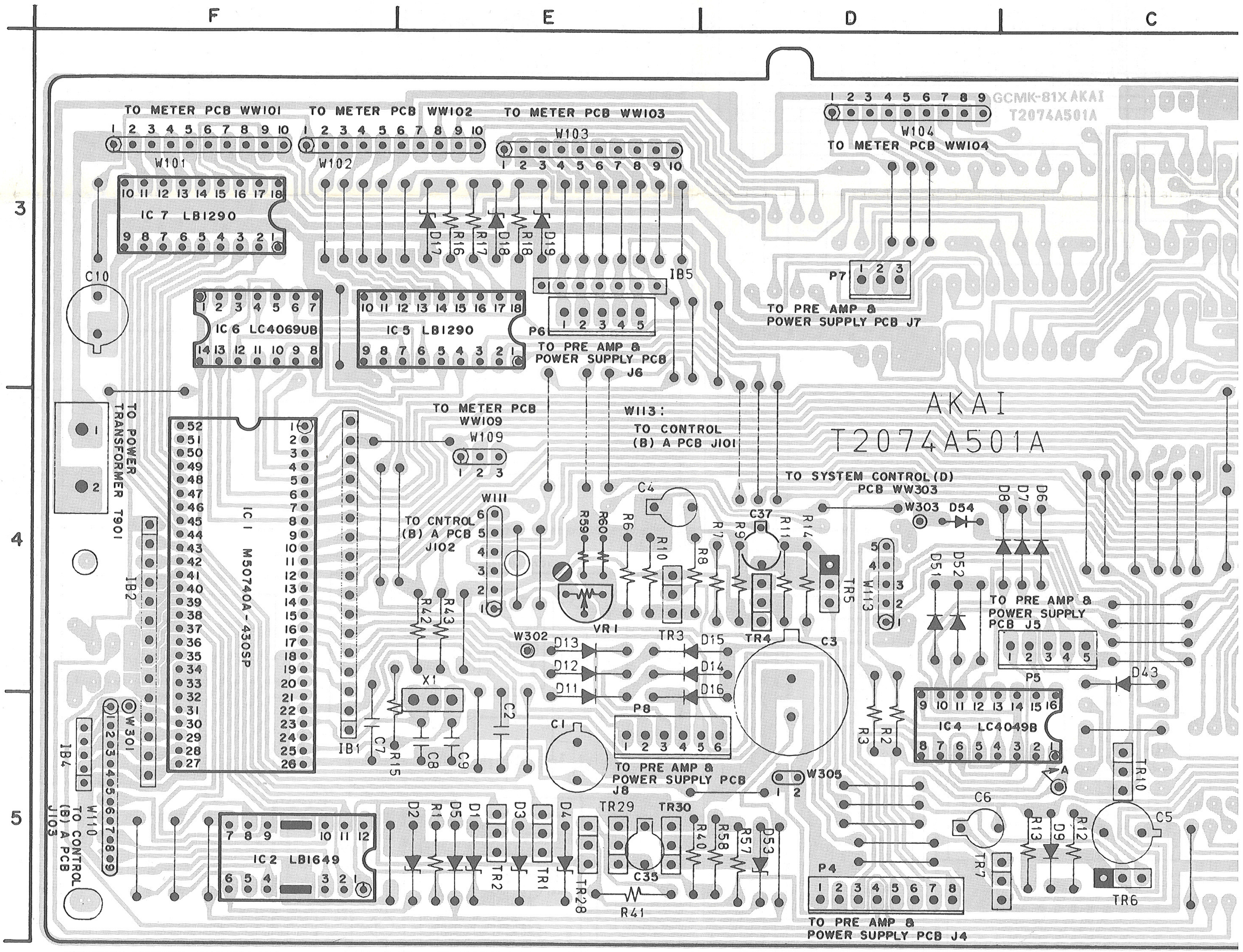
F
G
H
I
J
K
1
2
3
4
5
6
7
8
TR28
2SD612K(E)
13.1V
12.5V
11.8V
R41 1k
R57 1/4W 15k
D53 HZ6C1
TR29
2SC2603
(E,F)
12.5V
6.2V
0V
R58 1/4W 15k
C35 22/16(M)
R40 2.2k
TR27
2SA1347
4.4V
5.6V
46k
23k
D48 DS448
D49 DS448
D50 DS448
A0
B2
B3
C34 0.47/50(M)
#0
#2
#3
#1
#C
IB 4
0.01
10k
P6
dbX
FILTER
C
B
DOLBY NR
TO PRE AMP & POWER SUPPLY PCB J6
P5
N CrO2
70μ
METAL
CrO2
PEAK/SPEC
TO PRE AMP & POWER SUPPLY PCB J5
P4
+9V
−3V
+30V
+15V
+12V
+5.5V
+5.5V
GND
TO PRE AMP & POWER SUPPLY PCB J4
W305
TO SYSTEM CONTROL (D) PCB WW305
P10
GND
+5V
STOP
R.PAUSE
FWD
REV
A MUTE
FF
RWD
TO PRE AMP & POWER SUPPLY PCB J10
W301
TO SYSTEM CONTROL (D) PCB WW301
W302
TO SYSTEM CONTROL (D) PCB WW302
P8
BOP
PB MUTE
R MUTE
P.OFF
OSC
R/P
TO PRE AMP & POWER SUPPLY PCB J8
W303
TO SYSTEM CONTROL (D) PCB WW303
ECB
2SA1347
2SC3399
2SA1115
2SC2603
2SD612K
P15
P16
P17
RESET OUT
CE
R/W
O
R0
R1
R2
R3
P01
P00
CNTR
INT
NC
CN VSS
RESET
X IN
X OUT F
X OUT S
VSS
R15 1M
X1 4MHz
C8 30P
C9 30P
PO2
PO1
PO0
PO3
D13 DS448
D12 DS448
D11 DS448
D14 DS448
D15 DS448
D16 DS448
D9 DS448
R12 1k
R13 47k
C6 1/50(M)
C7 0.01
TR8
2SC3399
TR6
2SA1115
(E,F)
TP7
2SC3399
47k
−1.7V
5.5V
+5V
GND
P7
METER IN(L)
GND
METER IN(R)
TO PRE AMP & POWER SUPPLY PCB J7
TO LOADING PCB
P23
P22
P21
P20
R61 120k
PO7
PO6
PO5
PO4
IC3 LC7800
INH
VDD
BD
SC
D3
D2
D1
D0
A0
A1
A2
A3
B0
B1
B2
B3
C0
C1
C2
C3
VSS
W304
TO SYSTEM CONTROL (D) PCB WW304
TO SYSTEM CONTROL (D) PCB WW306
C15 0.01/25
C16
C17 0.01/25
C18 0.01/25
C19 0.01/25
C20 0.01/25
C21 0.01/25
C22 0.01/25
C23 0.01/25
C24 0.01/25
C25 0.01/25
C26 0.01/25
W104
W105
W106
F
METER IN (L)
GND
METER IN (R)
STOP
R.PAUSE
FWD
REV
A.MUTE
F.F
RWD
C.RESET
IPLS
REV
REV
GND
TO METER PCB WW104
TO METER PCB WW105
TO METER PCB WW106

GX-R60
SYSTEM CONTROL (A)
SCHEMATIC DIAGRAM

NO.3-2 851003A

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

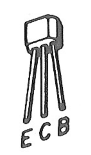
備考
C, Rの単位(特に指定された部品以外)
抵抗……………Ω 1/4W(J), (FS)記号は不燃性部品
コンデンサ………μF 50WV(J)


F
E
D
C
3
4
5
TO METER PCB WW101
TO METER PCB WW102
TO METER PCB WW103
W101
W102
W103
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9
W104
TO METER PCB WW104
GCMK-81X AKAI
T2074A501A
IC 7 LB1290
IC 6 LC4069UB
IC 5 LB1290
C10
D17
R16
R17
D18
R18
D19
IB5
P7
TO PRE AMP & POWER SUPPLY PCB J7
P6
TO PRE AMP & POWER SUPPLY PCB J6
TO POWER TRANSFORMER T901
IC1 M50740A-430SP
TO METER PCB WW109
W109
W113 : TO CONTROL (B) A PCB J101
AKAI
T2074A501A
TO SYSTEM CONTROL (D) PCB WW303
W303
D54
D8
D7
D6
IB2
W111
TO CNTROL (B) A PCB J102
R59
R60
R6
R10
R7
R8
C4
C37
R9
R11
R14
TR5
W113
D51
D52
TO PRE AMP & POWER SUPPLY PCB J5
R42
R43
W302
D13
D12
D11
VR1
TR3
D15
D14
D16
TR4
C3
P5
D43
X1
IB1
C7
C8
C9
R15
C2
C1
P8
TO PRE AMP & POWER SUPPLY PCB J8
R3
R2
IC4 LC4049B
W305
TR10
C6
C5
IB4
W301
W110 TO CONTROL (B) A PCB J103
IC2 LB1649
D2
R1
D5
D1
TR2
D3
TR1
D4
TR28
TR29
TR30
C35
R40
R58
R57
D53
R41
P4
TO PRE AMP & POWER SUPPLY PCB J4
TR7
R13
D9
R12
TR6

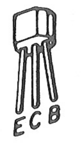
W301: TO SYSTEM CONTROL (D) PCB WW301

W302 : TO SYSTEM CONTROL (D) PCB WW302

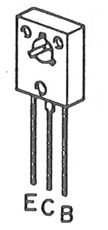
W305 : TO SYSTEM CONTROL (D) PCB WW305



2SA1347
2SC3399



2SA1115
2SC2603



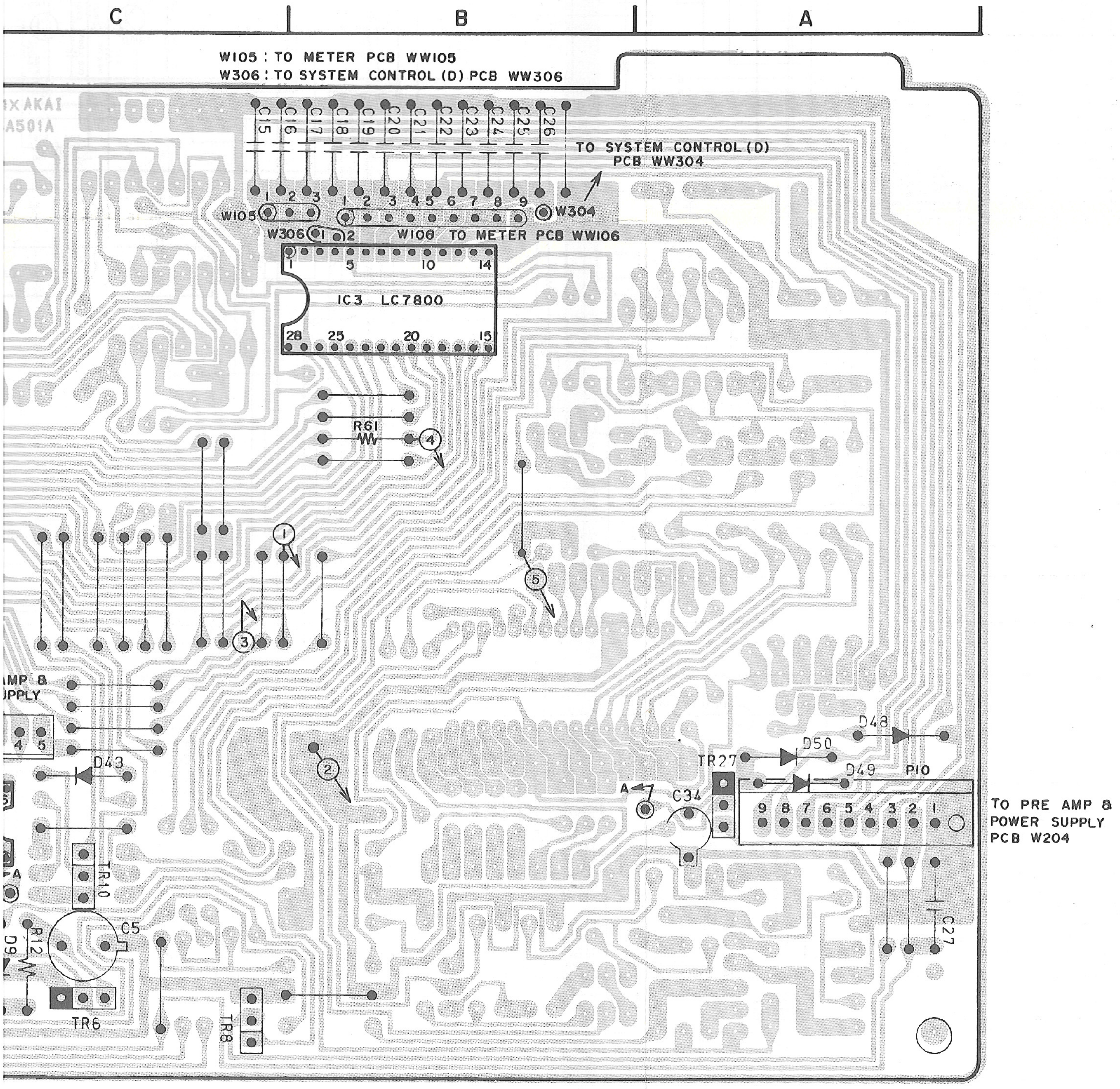
2SD612K

B ▢●● = NPN TRANSISTOR

B ■●● = PNP TRANSISTOR

TR1, 2, 7, 8, 10, 30 - -
TR3, 4, 29 - - - - - -
TR5, 6 - - - - - - - -
TR27 - - - - - - - -
TR28 - - - - - - - -

VR1 : QUICK REV SENS ADJ


C
B
A
W105 : TO METER PCB WW105
W306 : TO SYSTEM CONTROL (D) PCB WW306
AKAI
A501A
C15
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
C26
TO SYSTEM CONTROL (D) PCB WW304
W105
W304
W306
W106 TO METER PCB WW106
IC3 LC7800
R61
D43
TR10
C5
R12
D9
TR6
TR8
TR27
C34
D48
D50
D49
P10
TO PRE AMP & POWER SUPPLY PCB W204
C27
AMP &
UPPLY

SYSTEM CONTROL (A) PCB T2074A501A
システム コントロール(A)基板

LOCATION OF COMPONENTS

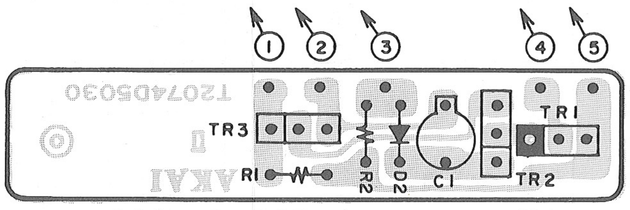
ICs
IC1.....F4
IC2.....F5
IC3.....B3
IC4.....C5,D5
IC5.....E3
IC6.....F3
IC7.....F3

TRs
TR1.....E5
TR2.....E5
TR3.....E4
TR4.....D4
TR5.....D4
TR6.....C5
TR7.....C5
TR8.....C5
TR10....C5
TR27....A5
TR28....E5
TR29....E5
TR30....E5

CONNECTORS

P4......D5
P5......C4
P6......E3
P7......D3
P8......E5
P10.....A5

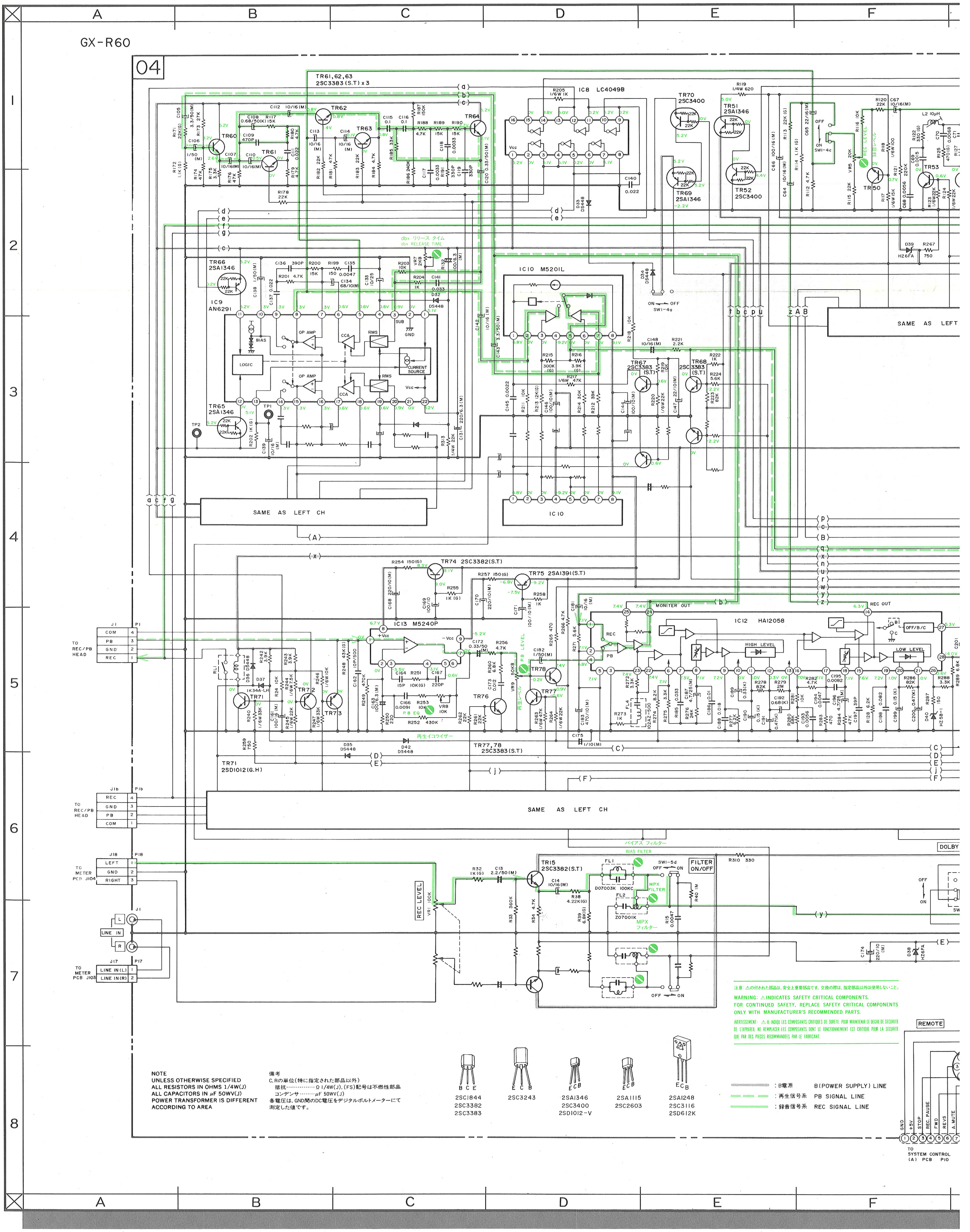
TR1,2,7,8,10,30 -- 2SC3399
TR3,4,29 ------ 2SC2603(E,F)
TR5,6 -------- 2SA1115(E,F)
TR27 --------- 2SA1347
TR28 --------- 2SD612K


①
②
③
④
⑤
T2074D5030
AKAI
TR3
R1
R2
D2
C1
TR1
TR2

TR1 ---- 2SA1347
TR2,3 -- 2SC3399

LOADING PCB T2074D5030
ローディング基板

GX-R60


04
A
B
C
D
E
F
1
2
3
4
5
6
7
8
TR61, 62, 63 2SC3383 (S.T) x 3
TR62
TR63
TR64
TR60
TR61
IC8 LC4049B
TR70 2SC3400
TR51 2SA1346
TR69 2SA1346
TR52 2SC3400
TR53
TR50
SW1-4c
REC LEVEL
VR5
L2 10μH
dbx リリース タイム
dbx RELEASE TIME
VR7
TR66 2SA1346
IC9 AN6291
OP AMP
CCA
RMS
BIAS
LOGIC
CURRENT SOURCE
SUB
GND
TR65 2SA1346
TP1
TP2
IC10 M5201L
SW1-4a
TR67 2SC3383 (S.T)
TR68 2SC3383 (S.T)
SAME AS LEFT CH
IC 10
TR74 2SC3382 (S.T)
TR75 2SA1391 (S.T)
IC13 M5240P
IC12 HA12058
MONITER OUT
REC OUT
HIGH LEVEL
LOW LEVEL
OFF/B/C
REC
PB
PB EQ
VR8
VR9
PB LEVEL
再生イコライザー
TR76
TR77
TR78
TR77, 78 2SC3383 (S.T)
RL1
TR71
TR72
TR73
TR71 2SD1012 (G.H)
J1
P1
COM
PB
GND
REC
TO REC/PB HEAD
J1b
P1b
J18
P18
LEFT
RIGHT
TO METER PCB J104
LINE IN
L
R
J17
P17
LINE IN (L)
LINE IN (R)
TO METER PCB J103
REC LEVEL
VR1
TR15 2SC3382 (S.T)
FL1
FL2
SW1-5d
FILTER ON/OFF
MPX FILTER
MPX フィルター
バイアス フィルター
BIAS FILTER
DOLBY
REMOTE
GND
+5V
STOP
REC. PAUSE
FWD
REVS
A. MUTE
TO SYSTEM CONTROL (A) PCB P10
B C E
2SC1844
2SC3382
2SC3383
E C B
2SC3243
E C B
2SA1346
2SC3400
2SD1012-V
E C B
2SA1115
2SC2603
E C B
2SA1248
2SC3116
2SD612K

注意: ⚠の付された部品は、安全上重要部品です。交換の際は、指定部品以外は使用しないこと。

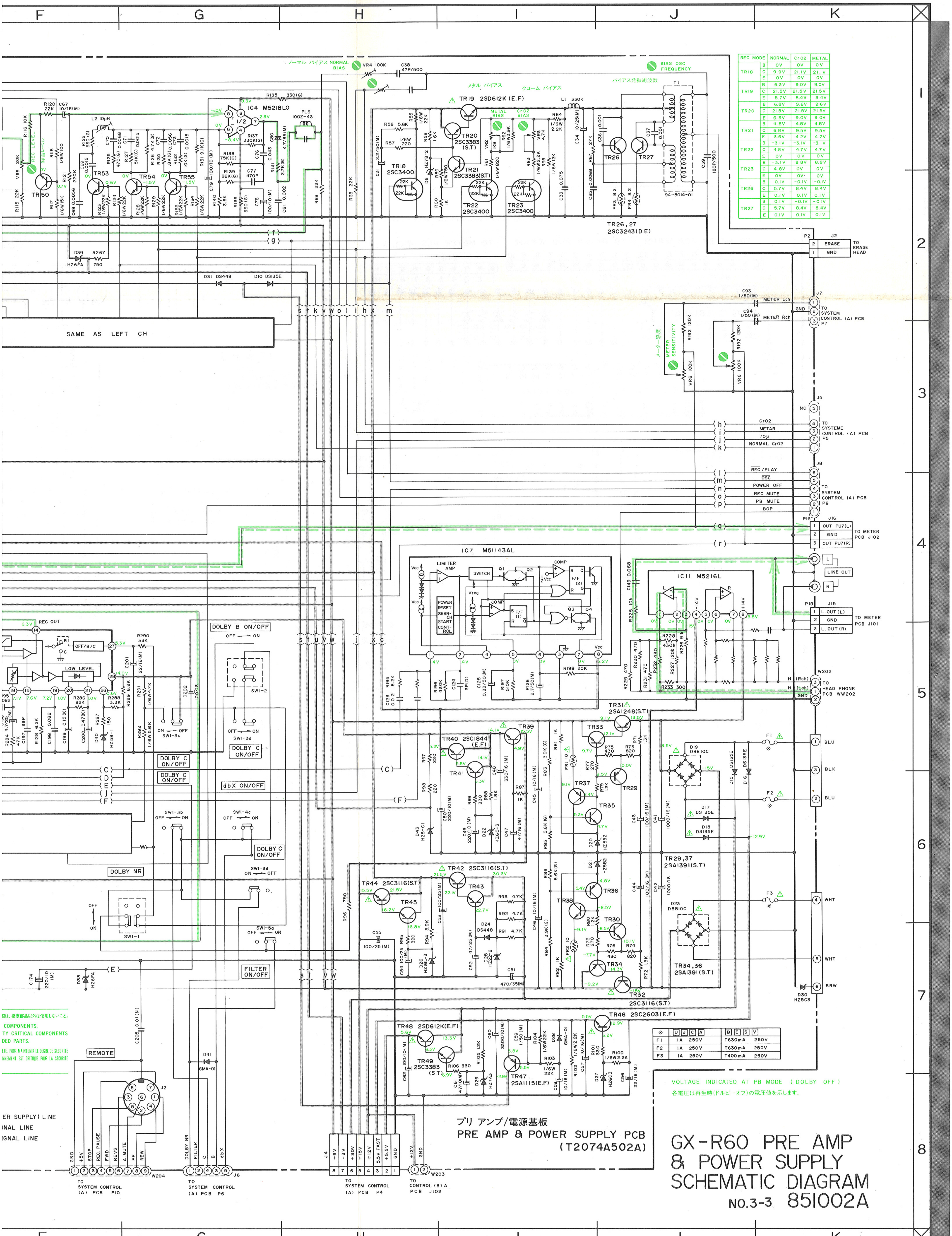
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS.
FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS
ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

備考
C, Rの単位(特に指定された部品以外)
抵抗……………Ω 1/4W(J), (FS)記号は不燃性部品
コンデンサ………μF 50WV(J)
各電圧は、GND間のDC電圧をデジタルボルトメーターにて測定した値です。

▨	: B電源	B(POWER SUPPLY) LINE
🟩 🟩 🟩	: 再生信号系	PB SIGNAL LINE
🟩	: 録音信号系	REC SIGNAL LINE


F
G
H
I
J
K
1
2
3
4
5
6
7
8
IC4 M5218L0
IC7 M51143AL
IC11 M5216L
TR19 2SD612K (E.F)
TR20 2SC3383 (S.T)
TR21 2SC3383(ST)
TR18 2SC3400
TR22 2SC3400
TR23 2SC3400
TR26, 27 2SC3243(D.E)
T1 94-5014-01
ノーマル バイアス NORMAL BIAS
メタル バイアス
クローム バイアス
METAL BIAS
Cr O2 BIAS
BIAS OSC FREQUENCY
バイアス発振周波数
メーター感度 METER SENSITIVITY
REC LEVEL
SAME AS LEFT CH
TO ERASE HEAD
TO SYSTEME CONTROL (A) PCB P7
TO SYSTEME CONTROL (A) PCB P5
TO SYSTEM CONTROL (A) PCB P8
TO METER PCB J102
TO METER PCB J101
LINE OUT
TO HEAD PHONE PCB WW202
DOLBY B ON/OFF
DOLBY C ON/OFF
dbX ON/OFF
DOLBY NR
FILTER ON/OFF
REMOTE
TR31 2SA1248(S.T)
TR40 2SC1844 (E.F)
TR29, 37 2SA1391(S.T)
TR34, 36 2SA1391(S.T)
TR32 2SC3116(S.T)
TR42 2SC3116(S.T)
TR44 2SC3116(S.T)
TR46 2SC2603(E.F)
TR48 2SD612K(E.F)
TR49 2SC3383 (S.T)
TR47 2SA1115(E.F)
BLU
BLK
WHT
BRW
TO SYSTEM CONTROL (A) PCB P10
TO SYSTEM CONTROL (A) PCB P6
TO SYSTEM CONTROL (A) PCB P4
TO CONTROL (B) A PCB J102

REC MODE		NORMAL	Cr O2	METAL
TR18	B	0V	0V	0V
	C	9.9V	21.1V	21.1V
	E	0V	0V	0V
TR19	B	6.3V	9.0V	9.0V
	C	21.5V	21.5V	21.5V
	E	5.7V	8.4V	8.4V
TR20	B	6.8V	9.6V	9.6V
	C	21.5V	21.5V	21.5V
	E	6.3V	9.0V	9.0V
TR21	B	4.8V	4.8V	4.8V
	C	6.8V	9.5V	9.5V
	E	3.6V	4.2V	4.2V
TR22	B	-3.1V	-3.1V	-3.1V
	C	4.8V	4.7V	4.7V
	E	0V	0V	0V
TR23	B	-3.1V	8.8V	8.8V
	C	4.8V	0V	0V
	E	0V	0V	0V
TR26	B	0.1V	-0.1V	-0.1V
	C	5.7V	8.4V	8.4V
	E	0.1V	0.1V	0.1V
TR27	B	0.1V	-0.1V	-0.1V
	C	5.7V	8.4V	8.4V
	E	0.1V	0.1V	0.1V

※	U J C A	B E S V
F1	1A 250V	T630mA 250V
F2	1A 250V	T630mA 250V
F3	1A 250V	T400mA 250V

際は、指定部品以外は使用しないこと。

COMPONENTS.
TY CRITICAL COMPONENTS
DED PARTS.

ETE. POUR MAINTENIR LE DEGRE DE SECURITE
NNEMENT EST CRITIQUE POUR LA SECURITE

ER SUPPLY) LINE
NAL LINE
IGNAL LINE

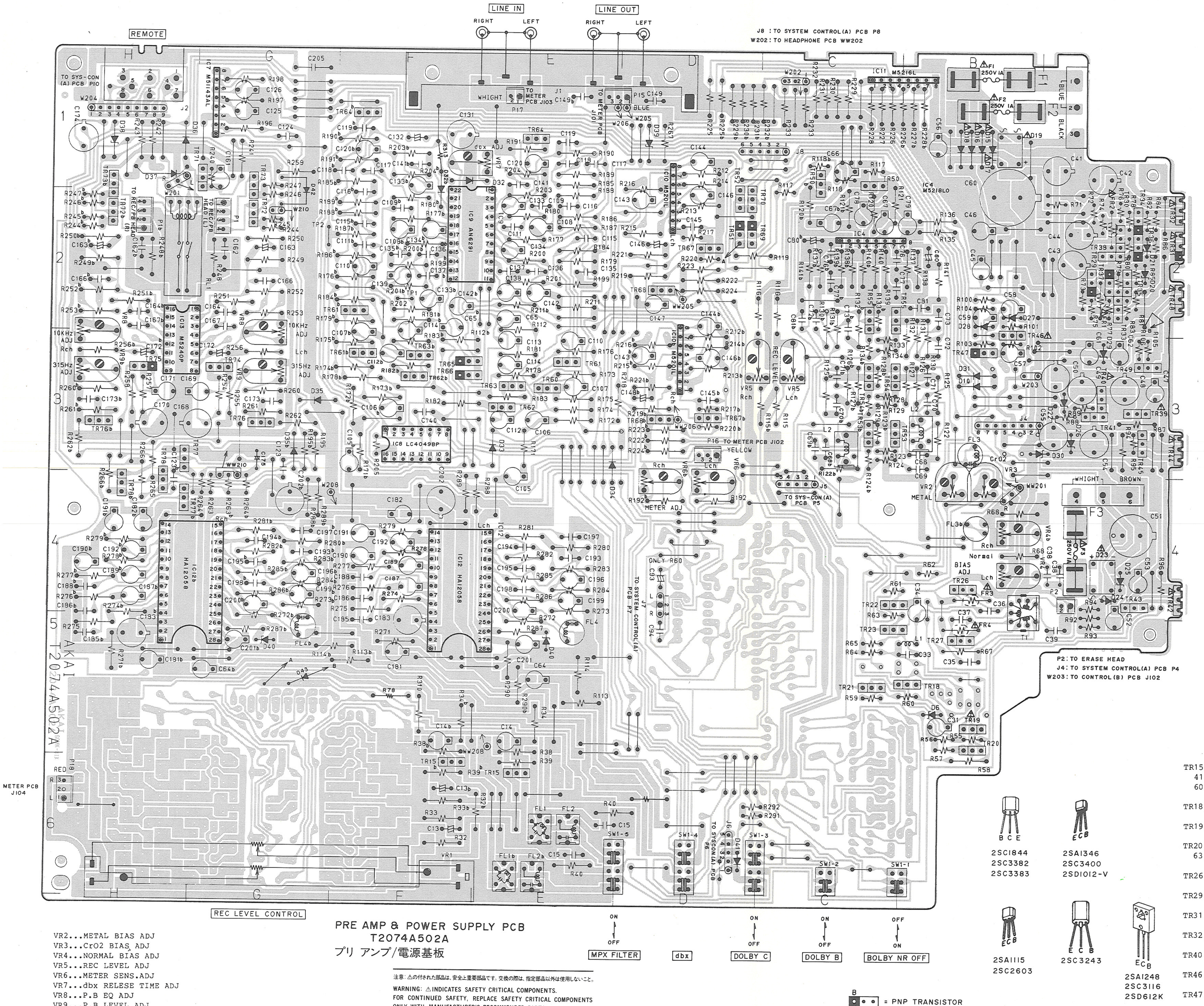
VOLTAGE INDICATED AT PB MODE (DOLBY OFF)

各電圧は再生時(ドルビーオフ)の電圧値を示します。

プリ アンプ/電源基板
PRE AMP & POWER SUPPLY PCB
(T2074A502A)

GX-R60 PRE AMP & POWER SUPPLY SCHEMATIC DIAGRAM

NO.3-3. 851002A



REMOTE
LINE IN
RIGHT
LEFT
LINE OUT
RIGHT
LEFT
J8 : TO SYSTEM CONTROL(A) PCB P8
W202: TO HEADPHONE PCB WW202
TO SYS-CON (A) PCB P10
TO METER PCB J103
TO METER PCB J101
P16 TO METER PCB J102
TO SYS-CON (A) PCB P5
TO SYSTEM CONTROL(A) PCB P7
TO SYSCON(A) PCB P6
P2: TO ERASE HEAD
J4: TO SYSTEM CONTROL(A) PCB P4
W203: TO CONTROL(B) PCB J102
METER PCB J104
AKAI T2074A502A
REC LEVEL CONTROL

ON
OFF
MPX FILTER

dbx

ON
OFF
DOLBY C

ON
OFF
DOLBY B

OFF
ON
BOLBY NR OFF

VR2...METAL BIAS ADJ
VR3...CrO2 BIAS ADJ
VR4...NORMAL BIAS ADJ
VR5...REC LEVEL ADJ
VR6...METER SENS.ADJ
VR7...dbx RELESE TIME ADJ
VR8...P.B EQ ADJ
VR9...P.B LEVEL ADJ

PRE AMP & POWER SUPPLY PCB
T2074A502A
プリ アンプ/電源基板

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B C E
2SC1844
2SC3382
2SC3383
E C B
2SA1346
2SC3400
2SD1012-V
E C B
2SA1115
2SC2603
E C B
2SC3243
E C B
2SA1248
2SC3116
2SD612K

B ▣●● = PNP TRANSISTOR

B ●●● = NPN TRANSISTOR

LOCATION OF COMPONENTS

ICs
IC4.....C3
IC7.....G1
IC8.....F3
IC9.....F2
IC10....D1,D2
IC10b...D3
IC11....B1,C1
IC12....F4
IC12b...G4,H4
IC13....H2,H3

TRs
TR15....E6
TR15b...F6
TR18....B5
TR19....B5
TR20....B5
TR21....C5
TR22....C4
TR23....C5
TR26....B4
TR27....B5
TR29....A2
TR30....A2
TR31....A2
TR32....A2
TR33....A2
TR34....A2
TR35....A2
TR36....A2
TR37....A2
TR38....A2
TR39....A3
TR40....A3
TR41....A3
TR42....A2
TR43....A4
TR44....A3
TR45....A3
TR46....B2
TR47....B3
TR48....A2
TR49....A3
TR50....C1
TR50b...C1
TR51....D2
TR52....D2
TR53....C3
TR53b...C3
TR54....C3
TR54b...C3
TR55....C2
TR55b...C2
TR60....E3
TR60b...F3
TR61....E3
TR61b...F2
TR62....E3
TR62b...F3
TR63....E3
TR63b...F3
TR64....E1
TR64b...F1
TR65....F3
TR66....F3
TR67....D2
TR67b...D3
TR68....D2
TR68b...D3
TR69....D2
TR70....D2
TR71....G1
TR72....G2
TR72b...H2
TR73....G1
TR73b...H1
TR74....G3
TR75....H3
TR76....G3
TR76b...H3
TR77....H3
TR77b...H4
TR78....H4
TR78b...H4

CONNECTORS
P1.....G2
P1b....H2
P2.....A4
P15....D1,E1
P16....D3
P17....E1
P18....H6

TR15,30,33,35,38,39,
41,43,45,53,54,55,
60,64,72,73,74,76....2SC3382(S,T)

TR18,22,23,52,70.......2SC3400

TR19,48................2SD612K(E,F)

TR20,21,49,50,61,62,
63,67,68,77,78.......2SC3383(S,T)

TR26,27................2SC3243(D,E)

TR29,34,36,37,75.......2SA1391(S,T)

TR31...................2SA1248

TR32,42,44.............2SC3116(S,T)

TR40...................2SC1844(F)

TR46...................2SC2603(E,F)

TR47...................2SA1115(E,F,G)

TR51,65,66,69..........2SA1346

TR71...................2SD1012-V(H)